# DOCUMENT RESUME

ED 328 243 IR 014 850

| | |
|---|---|
| AUTHOR | Rathje, Linda |
| TITLE | AppleWorks for Educators: A Beginning and Intermediate Workbook. Version 3.0. |
| INSTITUTION | International Society for Technology in Education, Eugene, OR. |
| REPORT NO | ISBN-0-924667-75-3 |
| PUB DATE | 90 |
| NOTE | 450p. |
| AVAILABLE FROM | International Society for Technology in Education, 1787 Agate Street, Eugene, OR 97403. |
| PUB TYPE | Guides - Classroom Use - Materials (For Learner) (051) -- Guides - Non-Classroom Use (055) |
| EDRS PRICE | MF01 Plus Postage. PC Not Available from EDRS. |
| DESCRIPTORS | *Computer Assisted Instruction; Computer Printers; *Computer Software; Database Management Systems; Elementary Secondary Education; Instructional Materials; *Microcomputers; Spelling; Spreadsheets; *Teacher Improvement; Word Processing |
| IDENTIFIERS | *AppleWorks |

ABSTRACT

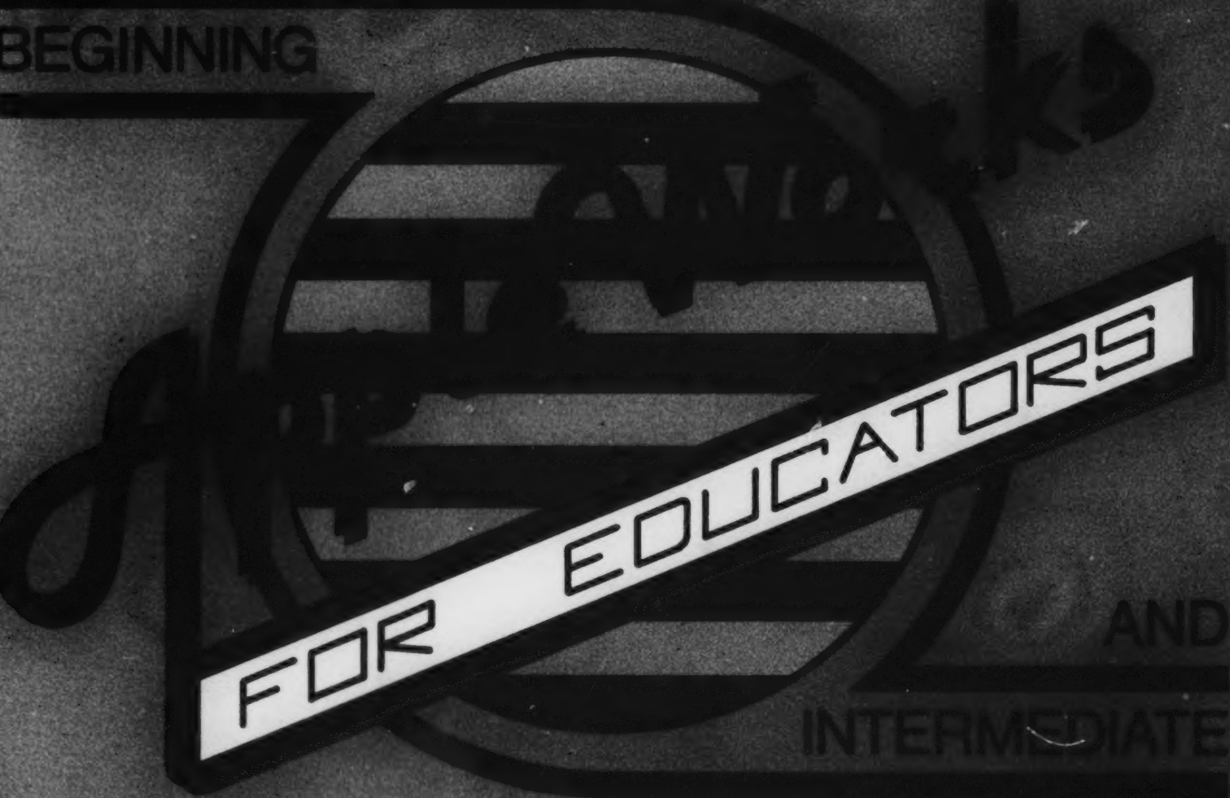
This manual provides teachers with learning activities designed to improve their use of computer applications and to facilitate the integration of computers into the curriculum. Step-by-step instructions for AppleWorks allow hands-on experience in the following applications: (1) formatting disks and getting started in general; (2) word processing, which includes deletion, editing, moving blocks of text, inserting text, and practicing with a sample document; (3) printer options, which includes creating a template file, adding files to the desktop, changing page numbers, margins, or set-up, and printer type sizes and styles; (4) spell checking; (5) using a spreadsheet, which includes basic spreadsheet features, entering formulas or grades, additional functions and features, and creating a spreadsheet template; (6) databases, which includes arranging, creating, copying, and printing databases; and (7) mail merging. A data disk is available from the publisher that contains the files used in the activities. Supplementary articles from "The Computing Teacher" on word processing, spreadsheets, databases, and AppleWorks are provided. A command index, a glossary of computer terms, and a subject index are included. (DB)

***********************************************************************
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
***********************************************************************

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED328243

# A
# BEGINNING



# AND
# INTERMEDIATE
# WORKBOOK

VERSION 3.0

IR014850

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
D. Moursand
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ISTE Publications

**Linda Rathje**

## About the Author

Linda Rathje has a masters degree in computer education from the University of Oregon. She currently teachers at the Da Vinci Technology alternative school (a former Apple Classroom of Tomorrow site) in Eugene, Oregon. She also teaches computer education classes at the University of Oregon and conducts teacher inservice workshops for the Eugene School District. Ms. Rathje was the Software Review Editor for *The Computing Teacher* from 1983-1987.

**Editors:** Neal Strudler and Anita Best
**Cover Design:** Percy Franklin
**Production:** Tamara Kidd, Ian Byington, Kim Ralston

**For Ordering and Catalog Information:**

International Society for Technology in Education
1787 Agate Street
Eugene, Oregon 97403
(503) 346-4414 FAX: (503) 346-5890
Compuserve: 70014,2114 Bitnet: ISTE@Oregon

Copyright © ISTE 1990
ISBN 0-924667-75-3

# Foreword

Like so many other educators, I began word processing with *Bank Street Writer*, "graduated" to *Apple Writer*, and eventually switched over to the program that I currently use, *AppleWorks*. I found that *AppleWorks* had the combination of ease of use and power that I had been looking for. In addition to its word processing module, *AppleWorks* offered powerful database and spreadsheet components, all in an easy-to-use, integrated package. I was sold!

Eventually I became proficient with the program and began teaching *AppleWorks* classes for other educators. I found that I could demonstrate various aspects of *AppleWorks*, suggest practice activities, and overall, do a reasonable job of teaching others to use the program. Upon reading my course evaluations, however, I found that this approach was not meeting many of my students needs. Students expressed a desire for written materials that spelled out, step-by-step, exactly what they should do. "It would be nice," I thought, "to find a text to use with my class," but at the time, the only *AppleWorks* books available were oriented to business applications. Such books would turn teachers off. I was resigned to continue teaching without a text and "tighten up" my own written materials.

Soon thereafter, ICCE (now ISTE) released Linda Rathje's workbook, *AppleWorks For Educators*. My dilemma was suddenly over. Using her book I found that I no longer needed to spend much time demonstrating or explaining procedures in front of the whole class. I could briefly introduce a topic and then have students work through the hands-on learning activities. Students found the exercises to be clear and fun, and I was available to answer questions that arose. The fact is, however, that the number of student questions decreased dramatically. Linda, who was also teaching *AppleWorks* classes at the time, fine-tuned her materials to the point that students could "get it" with little outside help. The materials were that good!

*AppleWorks for Educators: A Beginning and Intermediate Workbook* provides excellent learning activities designed to empower teachers with new productivity tools. Thousands of teachers have thus far benefitted from the original version of this book and thousands more will benefit from the current edition. And while teachers remain the immediate beneficiaries of this work, students around the country will surely profit as well. As teachers become comfortable with using computer applications, they will expand their use of these tools in their instruction.

The goal of integrating computers into the curriculum, while clearly worthwhile, is very difficult to implement. This book makes a valuable contribution to that long-term goal and I am very pleased to be associated with it.

Neal Strudler
Editor

# Acknowledgements

In the fall of 1988, as I completed the version 2.0 revision of my *AppleWorks for Educators* workbook, the reorganizing, reformatting, and integrating of new and revised activities seemed comparable to a home remodeling project.

When *AppleWorks* 3.0 was released—with new features in all three modules, a built-in spelling checker, multiple-column mailing labels, new spreadsheet functions, and improved module integration—it first looked like the workbook revisions would now be like an urban renewal project. However, while there are both obvious and subtle changes throughout version 3.0, they have not altered the basic *AppleWorks* "look and feel." Time after time, I noted that "at last" an irritating feature or procedure had been addressed in version 3.0 Some workbook activities have became much more brief—3.0 sometimes requires fewer steps to accomplish the same task. Other activities have been expanded because more features are available. The update was still quite an undertaking, but in the end turned out to be an enjoyable challenge.

What made this project especially pleasant was the network of *AppleWorks* users/instructors I had the opportunity to work with. Deborah Zwettler and Merill Truebe helped critique the first drafts of the revised chapters. Having worked with ISTE as graders for the *AppleWorks for Educators* Independent Study course, both appreciated the need for clear, detailed, and well-paced instructions written for educators with limited computing experience who might be working on their own. I sincerely appreciated those early "should we leave it in" conversations.

In the process of looking for sites to "road test" the revised activities, I met Julia Clauson. As a junior high school computer teacher with Wilmette School District #39 in Illinois, Julia has taught *AppleWorks* to numerous teachers, parents, and students. I found Julia's detailed recommendations served to strengthened the workbook activities and provided much-appreciated appraisals. We are now both exploring telecommunications, and opportunities for further networking seem guaranteed!

As the revised workbook was nearing completion, I was very fortunate to work with Suzie Jones, a staff development instructor with the University of Arizona. Suzie has worked with more than 350 beginning *AppleWorks* educators and has used *AppleWorks for Educators* for several years in her courses. She was able to provide additional insight into what an *AppleWorks* instructor needs from a hands-on workbook. I look forward to the next National Educational Computer Conference where we can meet and further exchange some *AppleWorks* instructor "war stories."

As the flow of corrections and editions returned to Eugene, Production Associate Tamara Kidd managed the design and page layout for this now 275-page workbook. Her efforts and skill are apparent—which readers will soon appreciate.

Keeping all involved parties on task and within deadlines once again fell to Anita Best, Editor of *The Computing Teacher*. Anita and I have worked together for over seven years—and our friendship has survived three book revisions! I continue to appreciate Anita's professional dedication, balanced perspective, and sense of humor.

To these friends, and colleagues I again want to say how much I appreciate their support and assistance. Thank you.

Linda (Roehl) Rathje
October 1990

# TABLE OF CONTENTS

## Chapter 0 Getting Started

**Activity 1** Setting a Standard Location for the Data Disk .......... 0-1

**Activity 2** Formatting a Blank Disk .......... 0-6
**Activity 3** Installing a Printer .......... 0-8
*Part 1* Adding a Printer .......... 0-8
*Part 2* Installing an Open-Apple H Printer .......... 0-11
*Part 3* Removing a Printer .......... 0-13

**Activity 4** Changing Date and Time Formats .......... 0-14
*Part 1* Changing the Date Format .......... 0-14
*Part 2* Changing the Time Format .......... 0-16

## Chapter 1 The Word Processor

**Activity 1** Correcting with the Delete Key .......... 1-1
*Part 1* Adding a Word Processor File to the Desktop .......... 1-1
*Part 2* Examining the Word Processor Screen .......... 1-3
*Part 3* Using the Delete Key .......... 1-4

**Activity 2** Using the Insert Cursor to Add Characters .......... 1-6
*Part 1* Using the Insert Cursor .......... 1-6

**Activity 3** Using the Overstrike Cursor to Replace Characters .......... 1-8
*Part 1* Using the Overstrike Cursor (Open-Apple E) .......... 1-8

**Activity 4** Deleting Blocks of Text .......... 1-10
*Part 1* Deleting Blocks of Text (Open-Apple D) .......... 1-10

**Activity 5** Moving Blocks of Text .......... 1-13
*Part 1* Moving Blocks of Text (Open-Apple M) .......... 1-13
*Part 2* Instructions for Activity #5-B .......... 1-14

**Activity 6** Finding and Replacing Text .......... 1-16
*Part 1* Finding and Replacing Text (Open-Apple R) .......... 1-16

**Activity 7** Editing Text (A Review) .......... 1-19
*Part 1* Instructions .......... 1-19
*Part 2* Printing a Word Processor File (Open-Apple P) .......... 1-20
*Part 3* Removing a File From the Desktop .......... 1-20

**Activity 8** Word Processing a Sample Document ........ 1-22
*Part 1* Creating a Word Processor File from Scratch ........ 1-22
*Part 2* Setting & Clearing Tab Stops (Open-Apple T) ........ 1-22
*Part 3* Entering Text ........ 1-24
*Part 4* Setting Boldface and Underline Commands (Control B, Control L) ........ 1-26
*Part 5* Using the *AppleWorks* Ruler (Open-Apple 1-9) ........ 1-27
*Part 6* Copying Text Within a Word Processor Document (Open-Apple C) ........ 1-28

## Chapter 2 Printer Options

**Activity 1** Basic Printer Options ........ 2-1
*Part 1* Adding a Word Processor File to the Desktop ........ 2-1
*Part 2* Margin Settings (LM, RM, TM, BM Printer Options) ........ 2-2
*Part 3* How to Center a Title (Control C) ........ 2-4
*Part 4* How to Center a Title (CN Printer Option) ........ 2-6
*Part 5* Changing the Size of Print (CI Printer Option) ........ 2-6
*Part 6* Calculating What Will Be Printed Per Page (Open-Apple K) ........ 2-7
*Part 7* Setting "New Page" Markers (Control P) (NP Printer Option) ........ 2-8

**Activity 2** Completing a Questionnaire ........ 2-10

**Activity 3** Creating a Template File ........ 2-12
*Part 1* Changing a File Name (Open-Apple N) ........ 2-12
*Part 2* Viewing All Files on the Disk ........ 2-13
*Part 3* Printing a File ........ 2-13

**Activity 4** Transferring Text Between Word Processor Files ........ 2-15
*Part 1* Creating a Word Processor File from Scratch ........ 2-15
*Part 2* Adding a Word Processor File to the Desktop ........ 2-16
*Part 3* Copying Text to the Clipboard ........ 2-16
*Part 4* Copying and Moving Text from the Clipboard (Open-Apple M) ........ 2-17
*Part 5* Moving Text to the Clipboard (Open-Apple M) ........ 2-18

**Activity 5** More Printer Options ........ 2-20
*Part 1* Adding Files to the Desktop ........ 2-20
*Part 2* Margin Settings (LM, RM Printer Options) ........ 2-21
*Part 3* Modifying a Tab Ruler (Open-Apple T) ........ 2-22
*Part 4* Creating Additional Tab Rulers (Open-Apple T) ........ 2-23
*Part 5* Printing Page Numbers (PP, FO, HE, Printer Options) ........ 2-26
*Part 6* Skipping Lines (SK Printer Option) ........ 2-29
*Part 7* Adjusting Margin Settings for Illustrations (LM, RM Printer Options) ........ 2-31
*Part 8* Justifying Right Margins (JU Printer Option) ........ 2-31
*Part 9* Copying Text Between Word Processor Files (Open-Apple C) ........ 2-33
*Part 10* Entering Text ........ 2-34
*Part 11* Calculating Pages (Open-Apple K) ........ 2-35
*Part 12* Stopping the Printer to Enter More Text (EK Printer Option) ........ 2-35
*Part 13* Pausing the Printer After Each Page or at a Particular Place (PE, PH Printer Options) ........ 2-36
*Part 14* Changing a Page Number (PN Printer Option) ........ 2-36

**Activity 6** Indenting, Setting Markers, Finding and Replacing Text ..................... 2-37
*Part 1* Adding a Word Processor File to the Desktop..................................... 2-37
*Part 2* Setting a Multi-Line Footer (Open-Apple O, FO) ............................... 2-38
*Part 3* Adjusting for Both Single and Double Spacing ................................... 2-39
*Part 4* Working with Word Wraparound Indenting Text (IN Printer Option) ....... 2-40
*Part 5* Setting Markers (SM Printer Option) .................................................. 2-42
*Part 6* Changing a File Name (Open-Apple N) ................................................ 2-42
*Part 7* Finding and Replacing Text (Open-Apple R) ........................................ 2-43
*Part 8* Using the Find Command (Open-Apple F) ............................................ 2-44
*Part 9* Reviewing Word Processor Commands (Open-Apple ?) ....................... 2-45
*Part 10* Printer Type Sizes and Styles............................................................ 2-46

## Chapter 3 The Spell Checker

**Activity 1** Verifying the Spelling ........................................................... 3-1
*Part 1* Checking one Word; Checking a Block of Words ................................. 3-2
*Part 2* Checking All Words in a Document ..................................................... 3-5

**Activity 2** Verifying the Spelling from a List.................................................. 3-9
*Part 1* Changing the Verification Method ....................................................... 3-9
*Part 2* Ignoring Words in the List
Ignoring Words In Context ............................................................................... 3-11
*Part 3* Adding Words to the Dictionary.......................................................... 3-12
*Part 4* Correcting Words in a List................................................................... 3-13

**Activity 3** Getting a Spelling Summary.......................................................... 3-15
*Part 1* Displaying a Complete Spelling Summary............................................ 3-15
*Part 2* Placing a Spelling Summary on the Clipboard ...................................... 3-18
*Part 3* Receiving a Spelling Summary with No Corrections............................. 3-20

**Activity 4** Working With the Custom Dictionary (Intermediate)...................... 3-22
*Part 1* Adjusting the Disk Drive Location ....................................................... 3-23
*Part 2* Adding an ASCII File to the Desktop.................................................... 3-24
*Part 3* Editing the Custom Dictionary............................................................. 3-25
*Part 4* Deleting a File from a Disk.................................................................. 3-26
*Part 5* Creating a New Custom Dictionary...................................................... 3-27
*Part 6* Removing a File from the Desktop....................................................... 3-29
*Part 7* Resetting the Current Disk Drive Setting.............................................. 3-30

**Activity 5** Changing the Spelling Checker Settings ....................................... 3-31
*Part 1* The Standard Settings Menu................................................................ 3-31
*Part 2* Selecting a Custom Dictionary............................................................. 3-32
*Part 3* Selecting a Spelling Method ................................................................ 3-34
*Part 4* Selecting a Standard Spelling Summary............................................... 3-34

## Chapter 4 The Spreadsheet

**Activity 1** An Introduction to the Spreadsheet ........ 4-1
*Part 1* Creating a Spreadsheet from Scratch ........ 4-1
*Part 2* Entering Spreadsheet Information ........ 4-3
*Part 3* Understanding the Escape Key ........ 4-4
*Part 4* Editing Spreadsheet Information (Open-Apple B) (Open-Apple U) (Open-Apple D) ........ 4-5
*Part 5* Changing Column Widths (Open-Apple L) ........ 4-7
*Part 6* Saving a Spreadsheet File (Open-Apple S) ........ 4-8

**Activity 2** Basic Spreadsheet Features ........ 4-9
*Part 1* Adding a Spreadsheet File to the Desktop ........ 4-9
*Part 2* Entering Values and Labels ........ 4-10
*Part 3* Entering and Copying Formulas (Open-Apple C) ........ 4-12
*Part 4* Making a Relative Copy ........ 4-13
*Part 5* Changing the Value Layout so Decimal Points Line Up (Open-Apple L) ........ 4-14
*Part 6* Changing the Label Format to Center Column Headings (Open-Apple L) ........ 4-15
*Part 7* Arranging Spreadsheet Rows (Open-Apple A) ........ 4-17
*Part 8* Editing Spreadsheet Information ........ 4-19
*Part 9* Protecting One or More Cells (Open-Apple L) ........ 4-19
*Part 10* Getting a Quick Printout of Screen Information (Open-Apple H) ........ 4-21
*Part 11* Using Spreadsheet Functions to Write Formulas ........ 4-23
*Part 12* Saving Several Spreadsheet Files ........ 4-26
*Part 13* Removing a File from the Desktop ........ 4-27
*Part 14* Printing a Spreadsheet Report (Open-Apple P) ........ 4-28

**Activity 3** Using a Spreadsheet for Grades ........ 4-30
*Part 1* Entering Formulas ........ 4-30
*Part 2* Entering Spreadsheet Functions ........ 4-31
*Part 3* Copying Formulas (Open-Apple C) ........ 4-32
*Part 4* Inserting Rows or Columns (Open-Apple I) ........ 4-33
*Part 5* Copying Formulas (Open-Apple C) ........ 4-34
*Part 6* Using the @AVG Function ........ 4-36
*Part 7* Using the @SUM Function ........ 4-36
*Part 8* Calculating a Student's Average Score for Several Activities ........ 4-37
*Part 9* Recalculating Formulas Automatically ........ 4-37
*Part 10* Editing Spreadsheet Information (Open-Apple U) ........ 4-38
*Part 11* Displaying Formulas On Screen (Open-Apple Z) ........ 4-39
*Part 12* Freezing Titles (Open-Apple T) ........ 4-41
*Part 13* Setting the Recalculation Order (Open-Apple V) ........ 4-41
*Part 14* Special Considerations for Arranging Spreadsheet Rows ........ 4-42

**Activity 4** Additional Spreadsheet Functions and Features ........ 4-46
*Part 1* Setting a Standard Format for Labels (Open-Apple V) ........ 4-46
*Part 2* Using the @IF Function ........ 4-47
*Part 3* Viewing the Spreadsheet Through Two "Windows" (Open-Apple W) ........ 4-49
*Part 4* Setting Up a Lookup Table ........ 4-50
*Part 5* Working With the @Lookup ( ) Function ........ 4-53

**Activity 5** Copying Within a Spreadsheet and Between Spreadsheet Files 4-57
*Part 1* Adding a Spreadsheet File to the Desktop 4-57
*Part 2* Copying a Block of Information Within a Worksheet (Open-Apple C) 4-58
*Part 3* Copying a Block of Information to the Clipboard (Open-Apple C) 4-59
*Part 4* Creating a Spreadsheet Template 4-60
*Part 5* Copying Between Spreadsheet Files (Open-Apple C) (Copying a Block of information) 4-61

**Activity 6** Transferring Spreadsheet Information to a Word Processor Document 4-63
*Part 1* Adding Several Files to the Desktop 4-63
*Part 2* Setting Printer Options (Open-Apple O) 4-64
*Part 3* Printing to the Clipboard (Open-Apple P) 4-66
*Part 4* Copying Spreadsheet Information Into a Word Processor File 4-67

**Activity 7** Transferring Word Processor Information to a Spreadsheet File 4-70

**Activity 8** A Review of Spreadsheet Features 4-73
*Part 1* Adding a Spreadsheet File to the Desktop 4-73
*Part 2* Changing Column Widths (Open-Apple L) 4-74
*Part 3* Inserting Rows (Open-Apple I) 4-74
*Part 4* Setting a Standard Format for Labels and Values (Open-Apple V) 4-74
*Part 5* Setting the Local Layout (Open-Apple L) 4-75
*Part 6* Entering a Line of Characters 4-76
*Part 7* Entering Spreadsheet Headings 4-77
*Part 8* Entering Formulas and Making Relative Copies (Open-Apple C) 4-79
*Part 9* Entering Formulas and Making Relative/No Change Copies (Open-Apple C) 4-79
*Part 10* Entering, Recalculating, and Viewing Values and Formulas 4-80
*Part 11* Printing a Spreadsheet Report (Open-Apple P) 4-83

## Chapter 5 The Database

**Activity 1** A Database Overview 5-1
*Part 1* Creating a Database from Scratch 5-1
*Part 2* Entering Category Names 5-2
*Part 3* Entering Record Information 5-3
*Part 4* Viewing Database Records (Open-Apple Z) 5-3
*Part 5* Moving the Cursor 5-4
*Part 6* Deleting Information (Delete key, Open-Apple Y, Open-Apple D) 5-5
*Part 7* Adding a Database File to the Desktop 5-6
*Part 8* Arranging Database Information by One Category (Open-Apple A) 5-7
*Part 9* Arranging Database Information by More Than One Category (Open-Apple A) 5-9
*Part 10* Finding Certain Records (Open-Apple F) 5-11
*Part 11* Changing the Column Width (Open-Apple L) 5-13
*Part 12* Hiding a Category (Open-Apple L) 5-16
*Part 13* Selecting Records: An Overview (Open-Apple R) 5-17
*Part 14* Selecting Records: A "Guided Tour" (Open-Apple R) 5-17
*Part 15* Writing Your Own Selection Rules (Optional) 5-21

**Activity 2** Printing Label Reports....5-22
*Part 1* Creating a Database from Scratch....5-22
*Part 2* Copying One Record Within a Database File (Open-Apple C)....5-23
*Part 3* Moving Categories on the Single-Record Screen (Open-Apple L)....5-23
*Part 4* Creating a New Label Format (Open-Apple P)....5-25
*Part 5* Setting Printer Options for One-Across Labels (Open-Apple O)....5-28
*Part 6* Printing to the Screen (Open-Apple P)....5-31
*Part 7* Turning Off the Top-Of-Page Command....5-32
*Part 8* Printing Multiple Columns of Labels (Open-Apple P, Open-Apple O)....5-32

**Activity 3** Working With a Database....5-35
*Part 1* Creating a Database from Scratch....5-35
*Part 2* Entering Category Names....5-35
*Part 3* Sctting Standard Values (Open-Apple V)....5-36
*Part 4* Entering Data....5-37
*Part 5* Combining Database Files (Open-Apple C)....5-38
*Part 6* Arranging Database Records (Open-Apple A)....5-39
*Part 7* Freezing Titles (Open-Apple T)....5-40
*Part 8* Selecting Records (Open-Apple R)....5-40
*Part 9* Adding Database Categories (Open-Apple N)....5-41
*Part 10* Inserting Database Records (Open-Apple I)....5-42

**Activity 4** Printing Table Reports....5-44
*Part 1* Creating a Table Format (Open-Apple P)....5-45
*Part 2* Changing Column Widths (Open-Apple --> or <--)
Hiding Categories from a Report (Open-Apple D)....5-47
*Part 3* Switching Category Positions (Open-Apple < or >).... 5-47
*Part 4* Setting Printer Options for a Table Report (Open-Apple O)....5-47
*Part 5* Viewing the Report On Screen (Open-Apple P)....5-49
*Part 6* Printing a Category Total (Open-Apple T)....5-50
*Part 7* Printing Group Totals (Open-Apple G)....5-51
*Part 8* Creating a Report Title (Open-Apple N)....5-53
*Part 9* Printing a Report to the Printer (Open-Apple P)....5-54

**Activity 5** Printing a Database Report with Calculated Categories....5-56
*Part 1* Adding a Database File to the Desktop....5-56
*Part 2* Adding Database Categories (Open-Apple N)....5-57
*Part 3* Changing Column Widths (Open-Apple L)....5-59
*Part 4* Entering New Information....5-60
*Part 5* Creating a Table Report from the Multiple Record Layout (Open-Apple P) . 5-61
*Part 6* Duplicating a Report Format (Open-Apple P)....5-62
*Part 7* Setting Up a Tables-Style Report With a Calculated Category
(Open-Apple K)....5-63
*Part 8* Editing a Calculated Category (Open-Apple K)....5-64
*Part 9* Setting Up a Second Calculated Category (Open-Apple K)....5-66

**Activity 6** Copying Records Between Database Files and Into a
Word Processor Document....5-68
*Part 1* Adding Database Files to the Desktop....5-68
*Part 2* Combining Database Files (Open-Apple C, to the Clipboard)....5-69
*Part 3* Changing the Name of a File (Open-Apple N)....5-70

*Part 4* Selecting Records and Hiding Database Categories (Open-Apple R, Open-Apple L) .......... 5-71
*Part 5* Copying Records to the Clipboard for the Word Processor (Open-Apple P, to the Clipboard) .......... 5-72
*Part 6* Creating a Word Processor File .......... 5-72
*Part 7* Copying Information from the Clipboard (Open-Apple C) .......... 5-72

**Activity 7** Transferring Database Records into a Word Processor Document .......... 5-75
*Part 1* Adding a Database File to the Desktop .......... 5-75
*Part 2* Setting Up a Table Report (Open-Apple P) .......... 5-76
*Part 3* Copying and Adjusting Information from the Clipboard (Open-Apple C, Open-Apple O) .......... 5-77
*Part 4* Selecting Records With Calculated Categories .......... 5-80

**Activity 8** Transferring Database Information Into a Spreadsheet File .......... 5-82
*Part 1* Adding a Database File to the Desktop .......... 5-82
*Part 2* Determining Which Categories to Include (Open-Apple L) .......... 5-83
*Part 3* Copying Database Records to the Clipboard (Open-Apple C) .......... 5-85
*Part 4* Bringing Information from the Database into the Spreadsheet .......... 5-85

## Chapter 6 Mail Merge

**Activity 1** Learning to Mail Merge .......... 6-1
*Part 1* Adding Files to the Desktop .......... 6-1
*Part 2* Examining the Database .......... 6-2
*Part 3* Sending Database Records to the Clipboard for Mail Merging .......... 6-3
*Part 4* Preparing the Word Processor File for Mail Merge .......... 6-4
*Part 5* Printing Merged Letters Directly to the Printer .......... 6-7

**Activity 2** Mail Merging Data from Calculated Categories .......... 6-9
*Part 1* Adding Files to the Desktop .......... 6-9
*Part 2* Examining the Database .......... 6-9
*Part 3* Changing a Category Name (Open-Apple N) .......... 6-10
*Part 4* Entering Text .......... 6-11
*Part 5* Preparing a Table Format .......... 6-14
*Part 6* Setting Up the Word Processor File .......... 6-15
*Part 7* Printing New Records to the Clipboard .......... 6-19
*Part 8* Printing a Mail Merged Document with Additional Keyboard Entries .......... 6-19

**Activity 3** Mail Merging and Saving to Disk .......... 6-22
*Part 1* Adding Files to the Desktop .......... 6-22
*Part 2* Examining the Database .......... 6-22
*Part 3* Sending Database Records to the Clipboard for Mail Merge .......... 6-23
*Part 4* Preparing a Word Processor File for Merging .......... 6-23
*Part 5* Printing a Mail Merged Word Processor File to Disk .......... 6-24
*Part 6* Creating a Word Processor File From a Text (ASCII) File .......... 6-26

## Supplement Articles

### Additional Readings

*AppleWorks* 3.0 Review
*Neal Strudler* ........ 1

*AppleWorks* 3.0 on 5.25-inch Disks
*Rod Farrell* ........ 3

Adding Macro-Power to AW
*Neal Strudler* ........ 4

### Word Processing

Word Processing for Teachers: Professional Results
*Donald W. Bullock* ........ 7

Writing with Word Processors for Remedial Students
*Neuman/Cobb-Morocco* ........ 10

Learning to Write with a New Tool: Young Children and Word Processing
*Jessica Kahn* ........ 13

The Computer as a Writing Tool
*Ellen Joslin* ........ 16

Process Writing in a One-Computer Classroom
*Kathy Pon* ........ 20

A Word Processing Resource for Everyone
*Julie M.T. Chan* ........ 25

### Spreadsheet

Mixing Science and Spreadsheets: A Recipe for Success
*Marty Schatz* ........ 27

Spreadsheets: More Than Just Finance
*Arthur Luehrmann* ........ 30

*AppleWorks* Afield
*A.W. Strickland* ........ 35

Using NFL Statistics to Teach the Spreadsheet
*Martin Miller* ........ 38

Teach Spreadsheet Proficiency with Personal Money Management Projects
*Nona Berghaus* ........ 41

**Database**

The Data Base: Getting to Know You
*Larry Hannah* ........ 43

Problem Solving with Data Bases
*Beverly Hunter* ........ 46

Teaching Data Base Search Strategies
*Larry Hannah* ........ 53

Micro-Climates
*Gary Monterossso* ........ 60

The Student-Designed Database
*Rick Thomas* ........ 62

Choosing the Right Database Management Program
*Edward Vockell and Donald Kopenec* ........ 65

Database Yearbook in Second Grade
*Ruth Hollis* ........ 69

A World Geography Database Project: Meeting Thinking Skills Head-On
*Carolyn L. Elder and Charles S. White* ........ 71

Database Activities in a One-Computer Classroom
*Jim Watson* ........ 74

Gorp on Disk: A High Tech Touch with the Out-of-Doors
*Elaine Gray* ........ 78

# CHAPTER O

## GETTING STARTED

### ACTIVITY 1
### SETTING A STANDARD LOCATION FOR THE DATA DISK

Welcome to *AppleWorks* ! In this workbook you will have an opportunity to gain hands-on experience in using a very popular integrated software program. Step-by-step instructions have been included in this workbook. An accompanying data disk contains the files you will be working with.

Before we begin, however, you will need to do some "housekeeping" tasks to set up the *AppleWorks* program to match your particular computer system.

In this chapter you will:

- Preset the *AppleWorks* program to automatically locate the disk drive your computer has available for your data disk;
- Prepare (format) a blank disk for storing your work as you complete the various activities in this workbook;
- Preset the *AppleWorks* program to automatically locate the printer you will be using; and
- Preset the *AppleWorks* program to display the date and time format you prefer.

To make these adjustments we will begin by loading *AppleWorks* .

1. Place your working copy of the *AppleWorks* Startup disk in drive 1.

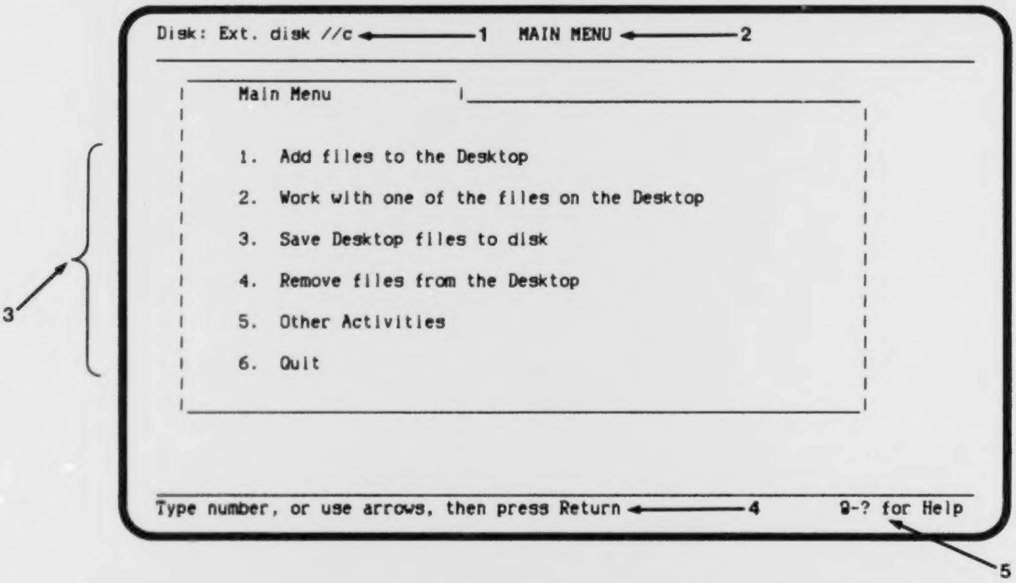
> **NOTE**: Drive 1 is the internal drive on Apple IIc computers. For computers with two 5.25-inch drives, drive 1 displays an activity light when the computer is first turned on. For computers with both 5.25-inch and 3.5-inch drives, use the 5.25-inch drive for your data disk.

2. Turn on the computer and monitor.

If you have a built-in clock in your Apple II, *AppleWorks* reads the data and time from it. If you have no built-in clock, *AppleWorks* will ask for today's date.

3. If prompted at the bottom of the screen, type in the date................. press **RETURN**

4. After you have started *AppleWorks* you will see the following screen:



Disk: Ext. disk //c

MAIN MENU

Type number, or use arrows, then press Return

1
2
Main Menu
1. Add files to the Desktop
2. Work with one of the files on the Desktop
3. Save Desktop files to disk
4. Remove files from the Desktop
5. Other Activities
6. Quit
3
4
@-? for Help
5

The Main Menu is the "control panel" for *AppleWorks*. Note the *AppleWorks* headings on the top and bottom of the screen. These guides will always be on the Main Menu screen, providing useful information such as the location of your current disk drive. Note also the six common *AppleWorks* tasks listed in the center of the screen.

#1 Location of the data disk. You can change this location to match your system.

#2 Your current location within the program; in this case the Main Menu.

#3 Main Menu options (or commands) for working with *AppleWorks* files.

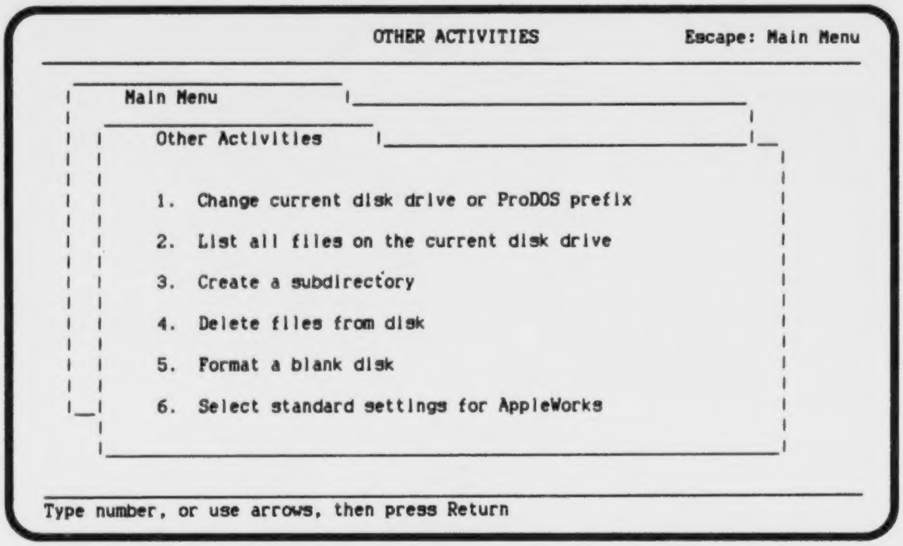
#4 This is the Main Menu prompt. Instructions for working with the *AppleWorks* files appear in this area.

#5 This screen guide is a reminder that holding down the Open-Apple key and pressing the Question Mark key will display a Help screen.

The "Other Activities" option on the Main Menu lets you do some housekeeping tasks. First we will tell *AppleWorks* which disk drive to access when adding or saving data files.

5. Select: 5. Other Activities.................................................... press **RETURN**

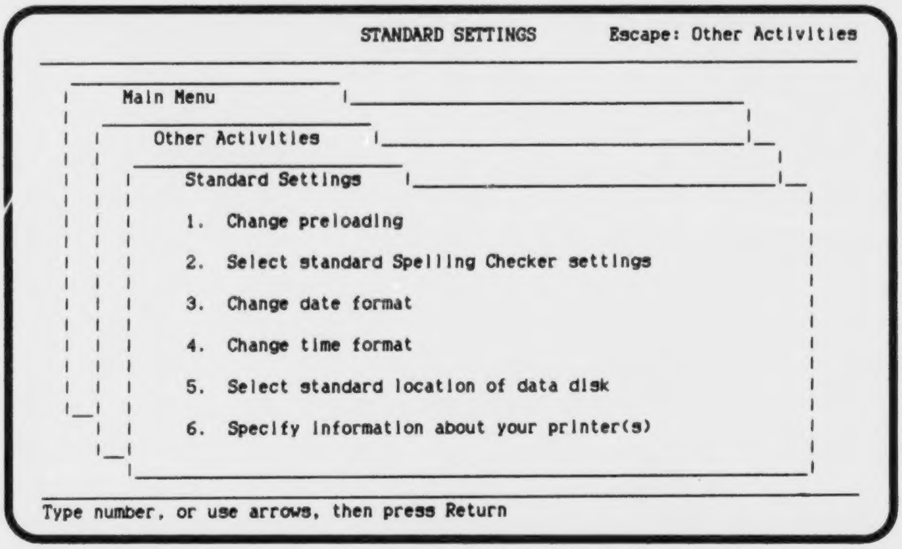
*AppleWorks* displays the Other Activities menu:



```
                              OTHER ACTIVITIES         Escape: Main Menu

  Main Menu
    Other Activities

      1.  Change current disk drive or ProDOS prefix
      2.  List all files on the current disk drive
      3.  Create a subdirectory
      4.  Delete files from disk
      5.  Format a blank disk
      6.  Select standard settings for AppleWorks

Type number, or use arrows, then press Return
```

6. Select: 6. Select standard settings for *AppleWorks*...................... press **RETURN**

*AppleWorks* displays the Standard Settings menu:

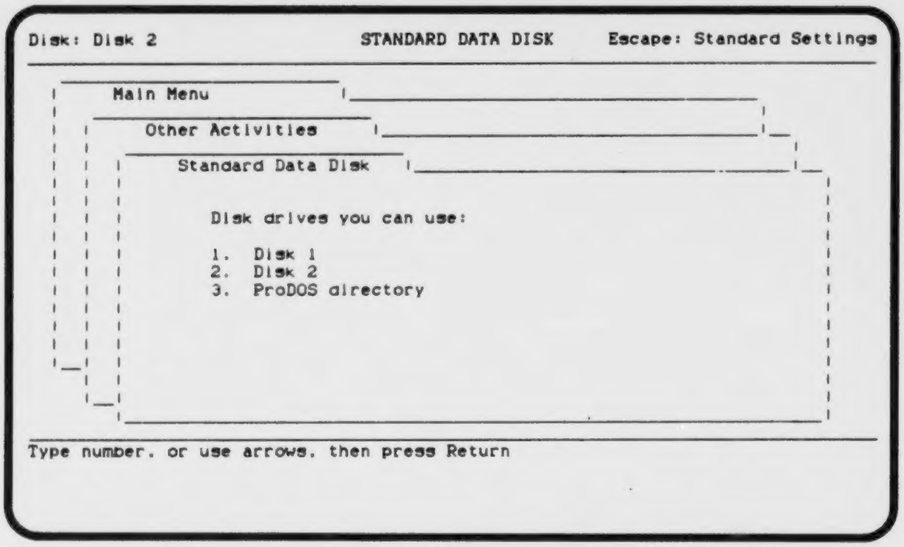


```
                              STANDARD SETTINGS       Escape: Other Activities

  Main Menu
    Other Activities
      Standard Settings

        1.  Change preloading
        2.  Select standard Spelling Checker settings
        3.  Change date format
        4.  Change time format
        5.  Select standard location of data disk
        6.  Specify information about your printer(s)

Type number, or use arrows, then press Return
```

7. Select: 5. Select standard location of data disk........................... press **RETURN**

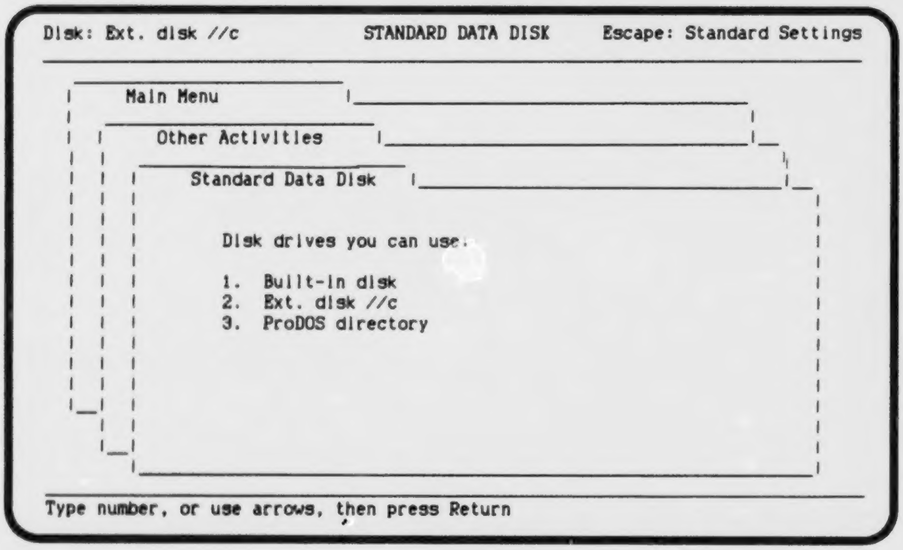
*AppleWorks* displays the disk drive(s) you can use:

**(Apple IIe sample display)**



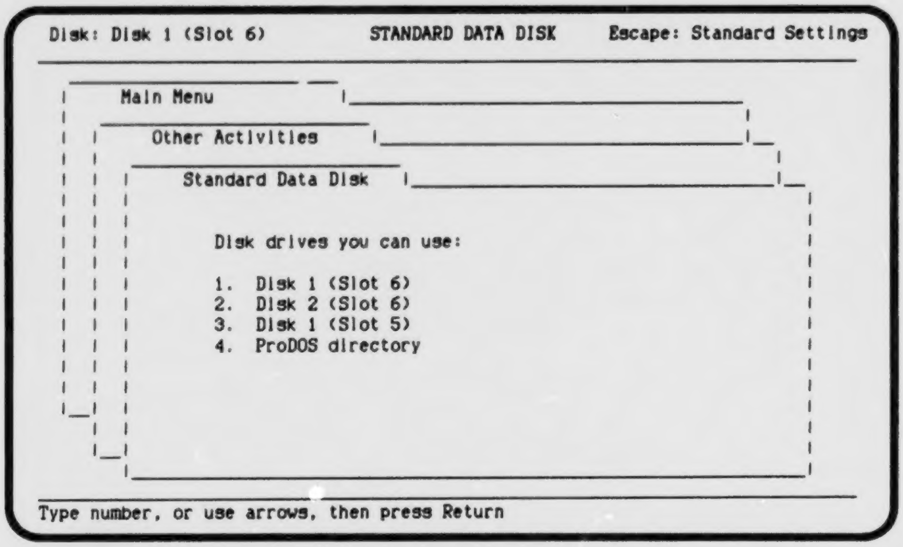
```
Disk: Disk 2                    STANDARD DATA DISK     Escape: Standard Settings

  Main Menu
    Other Activities
      Standard Data Disk

            Disk drives you can use:

            1.  Disk 1
            2.  Disk 2
            3.  ProDOS directory

Type number, or use arrows, then press Return
```

**(Apple IIc sample display)**



```
Disk: Ext. disk //c             STANDARD DATA DISK     Escape: Standard Settings

  Main Menu
    Other Activities
      Standard Data Disk

            Disk drives you can use:

            1.  Built-in disk
            2.  Ext. disk //c
            3.  ProDOS directory

Type number, or use arrows, then press Return
```

**(Apple IIGS sample display)**



```
Disk: Disk 1 (Slot 6)          STANDARD DATA DISK      Escape: Standard Settings

 Main Menu
   Other Activities
     Standard Data Disk

          Disk drives you can use:

          1.  Disk 1 (Slot 6)
          2.  Disk 2 (Slot 6)
          3.  Disk 1 (Slot 5)
          4.  ProDOS directory

Type number, or use arrows, then press Return
```

8. Select the disk drive appropriate for your machine.

**NOTE**: For Apple IIGS users: 3.5-inch disks drives are installed in Slot 5. The first drive, "Disk 1 (Slot 5)," will contain the *AppleWorks* program/dictionary disk. The second drive, "Disk 2 (Slot 5)," could be used for your data disk. 5.25-inch disk drives are installed in Slot 6.

- If you have one 5.25-inch disk drive, use "Disk 1 (Slot 6)" for your data disk.

9. Press RETURN. *AppleWorks* will return you to the Standard Settings menu.
10. Press Escape to return to the Other Activities menu.
11. Press Escape to return to the Main Menu.

# ACTIVITY 2
# FORMATTING A BLANK DISK

In the *AppleWorks for Educators* workbook you will find a 5.25-inch data disk. This disk contains the activity files you will be using as you work through the hands-on activities.

While working, you will often be reminded to save your work. In order to keep original files separate from your work, you will need a second data disk and when ready to save, will exchange the workbook data disk for this new data disk. The *AppleWorks* program contains an option for preparing a disk to use for file storage, again listed under "Other Activities."

For this activity:

- Make sure the *AppleWorks for Educators* data disk is **not** in the disk drive (formatting will permanently remove all files);
- Make sure the disk you are about to format is new—or contains information you are willing to destroy; and
- Make sure the "current disk" is set to the drive you use for your data disk (refer to Activity 1).

1. Begin at the Main Menu.
2. Select: 5. Other Activities ................................................. press **RETURN**
3. Select: 5. Format a blank disk ............................................. press **RETURN**
4. For type a disk name, enter: BACKUP .................................. press **RETURN**

When you press Return, *AppleWorks* warns you that the disk you want to format should be in the disk drive now.

5. If you have not done so already, insert a blank disk into the current drive.

**NOTE**: *AppleWorks* will erase any data when it formats the disk. And don't forget to close the disk drive door if you're using a 5.25-inch drive.

6. Press the Space Bar to indicate you are ready to continue.

If the disk you inserted was a blank disk, *AppleWorks* will now format the disk and return you to the Disk Formatter screen.

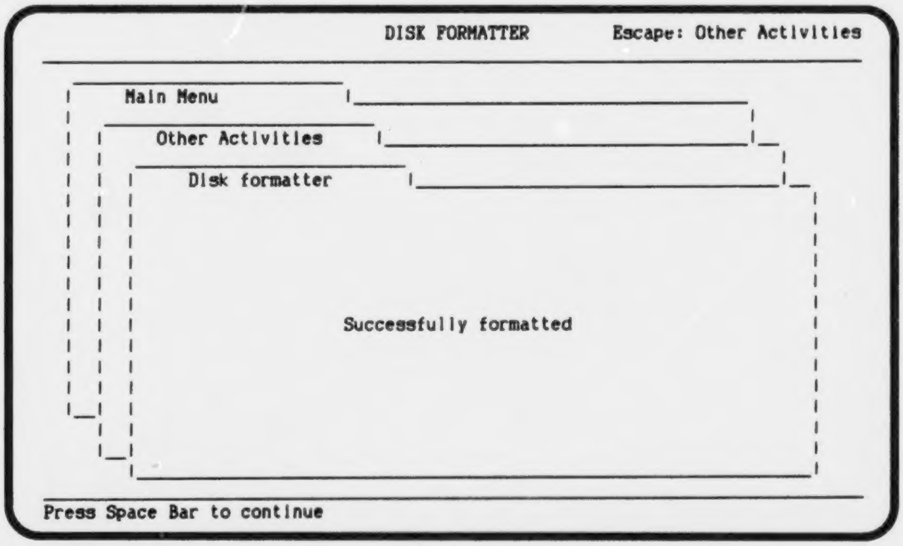
If the disk you inserted already contains information, *AppleWorks* will tell you, and ask whether it is OK to destroy the current contents of this disk.

7. *To avoid destroying* any existing data on a disk, press Escape to return to the Format screen, select another disk, and repeat steps 3 through 9.

8. To destroy any existing contents type *all three letters* of the word "Yes."

9. Press Return.

When done, *AppleWorks* will provide the following message:



```
                         DISK FORMATTER      Escape: Other Activities
---------------------------------------------------------------------
  ____________________
 |   Main Menu        |______________________________
 |  ____________________                             |
 | |  Other Activities  |______________________________|_
 | |  ____________________                              |
 | | |  Disk formatter    |______________________________|_
 | | |                                                     |
 | | |                                                     |
 | | |                                                     |
 | | |                                                     |
 | | |                Successfully formatted               |
 | | |                                                     |
 | | |                                                     |
 |_| |                                                     |
   |_|                                                     |
     |_____________________________________________________|
---------------------------------------------------------------------
Press Space Bar to continue
```

One data disk has now been formatted. To continue formatting other disks you could press the Space Bar and repeat steps 5 through 9. We will move on to Activity 3.

10. Press Escape to return to the Other Activities screen.

11. Press Escape to return to the Main Menu.

# ACTIVITY 3
# INSTALLING A PRINTER

*AppleWorks* comes set up to print for both the ImageWriter I and ImageWriter II printers. Both have been assigned to slot 1 ("port 1" for the Apple IIc).

*AppleWorks* can work with many other printers, serial and parallel. You can install up to three printers. These can be three different setups for the same printer, or three different printers connected to three different Apple slots. You can select a printer from a list within the *AppleWorks* setup, or set up a "custom" printer by specifying the specific printer codes.

To get started we will briefly examine the process for installing a printer from the list of printers *AppleWorks* supports. Once we have worked through an example, you can install your own printer from the list. If your printer is not listed, you will have to examine the *Claris AppleWorks Reference* manual and the documentation that came with your printer.

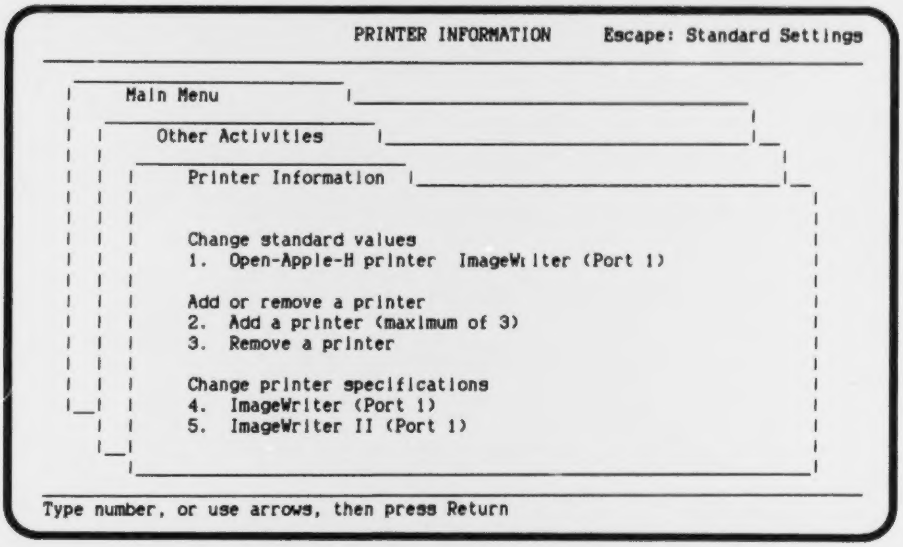
During this process we will also preset *AppleWorks* so you can quickly print a copy of what's on the screen.

## PART 1: ADDING A PRINTER

1. Begin at the Main Menu.
2. Select: 5. Other Activities .................................................... press **RETURN**
3. Select: 6. Select standard settings for AppleWorks...................... press **RETURN**
4. Select: 6. Specifying information about your printer(s) ................ press **RETURN**

*AppleWorks* displays the Printer Information menu:

**(sample display--your screen may list other printers)**



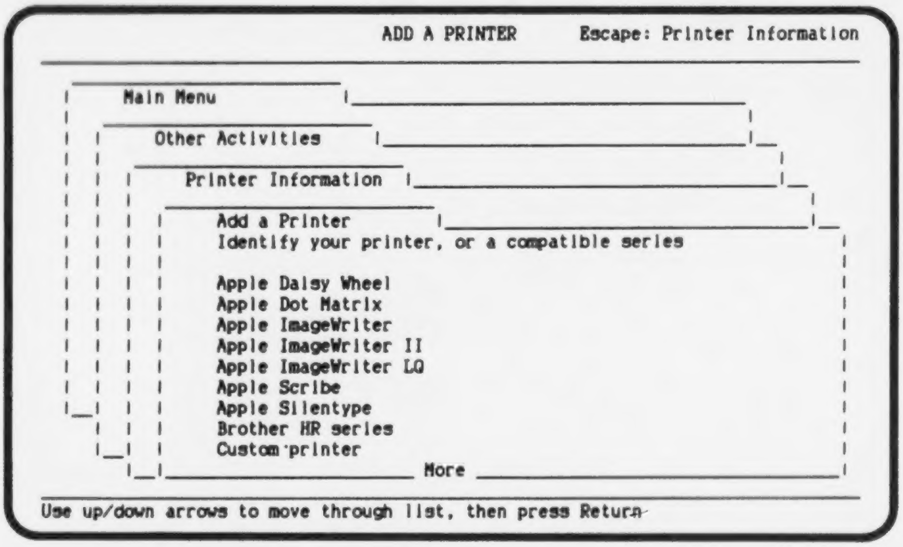
```
                        PRINTER INFORMATION     Escape: Standard Settings
_________________________________________________________________________
   ________________________
  |   Main Menu            |_________________________________
  |   ___________________________                            |
  |  |   Other Activities        |_____________________________|__
  |  |   __________________________                               |
  |  |  |   Printer Information    |______________________________|__
  |  |  |                                                            |
  |  |  |                                                            |
  |  |  |   Change standard values                                   |
  |  |  |   1.  Open-Apple-H printer  ImageWriter (Port 1)           |
  |  |  |                                                            |
  |  |  |   Add or remove a printer                                  |
  |  |  |   2.  Add a printer (maximum of 3)                         |
  |  |  |   3.  Remove a printer                                     |
  |  |  |                                                            |
  |  |  |   Change printer specifications                            |
  |__|  |   4.  ImageWriter (Port 1)                                 |
     |  |   5.  ImageWriter II (Port 1)                              |
     |__|                                                            |
        |____________________________________________________________|
_________________________________________________________________________
Type number, or use arrows, then press Return
```

From this screen you can:

- Identify which printer will print text directly from the screen, using Open-Apple H;
- Add up to three printer (or the same printer with up to three different setups);
- Change the printer specifications for a printer you already have installed.

5. Select: 2. Add a printer........................................................ press **RETURN**

*AppleWorks* displays a list of printers it supports:



```
                         ADD A PRINTER      Escape: Printer Information

   Main Menu
     Other Activities
       Printer Information
         Add a Printer
         Identify your printer, or a compatible series

         Apple Daisy Wheel
         Apple Dot Matrix
         Apple ImageWriter
         Apple ImageWriter II
         Apple ImageWriter LQ
         Apple Scribe
         Apple Silentype
         Brother HR series
         Custom printer
                              More
Use up/down arrows to move through list, then press Return
```

6. Use the Arrow keys to move through this list.

7. As an example, select: Epson RX series .................................. press **RETURN**

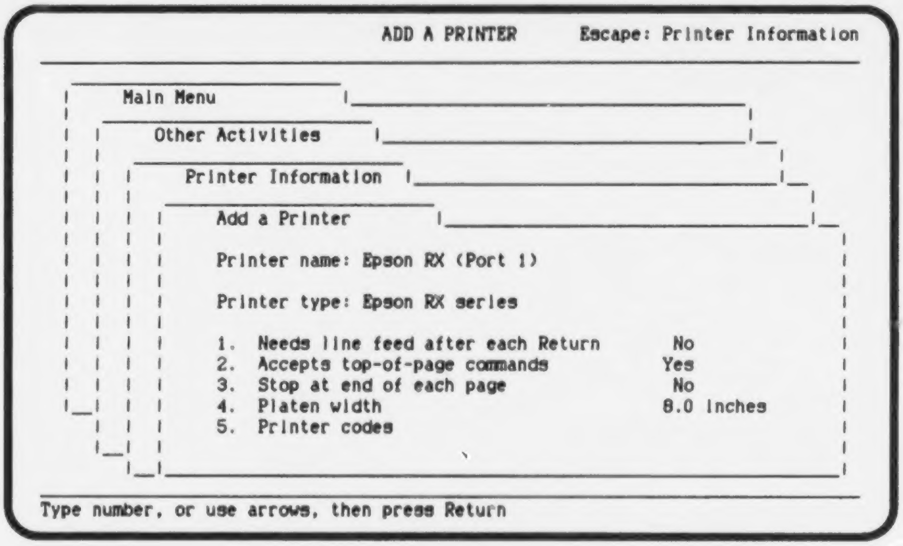
8. At the bottom of the screen enter: Epson RX ............................. press **RETURN**

> **NOTE**: You can use any printer name you want. For example, you could identify printers as "Lab Printer" or "Office Printer."

You will need to indicate the slot (or "port" for Apple IIc users) the printer is connected to.

9. For this example, select: Slot 1 (or Port 1) ............................... press **RETURN**

*Appleworks* will next ask you to confirm several printer settings:



```
                         ADD A PRINTER      Escape: Printer Information
________________________________________________________________________

  Main Menu
    Other Activities
      Printer Information
        Add a Printer

        Printer name: Epson RX (Port 1)

        Printer type: Epson RX series

        1.  Needs line feed after each Return       No
        2.  Accepts top-of-page commands           Yes
        3.  Stop at end of each page                No
        4.  Platen width                           8.0 inches
        5.  Printer codes
________________________________________________________________________
Type number, or use arrows, then press Return
```

When you select a printer from the *AppleWorks'* printer list, the screen will display the correct settings.

10. To confirm these Epson RX settings as correct, press Escape.

*AppleWorks* will return to the Printer Information screen.

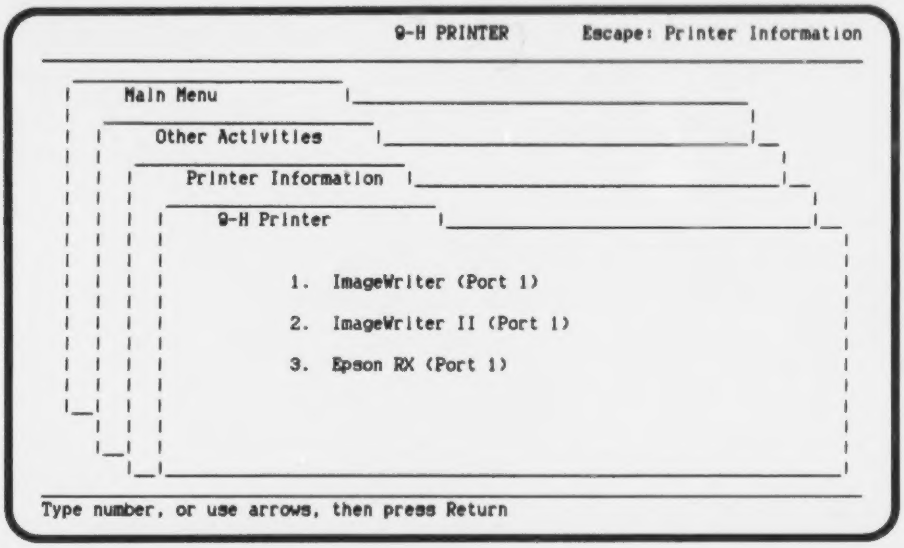
> **NOTE**: If you are setting up a "Custom" printer you will need to enter specific printer codes. The *Claris AppleWorks Reference* manual lists printer settings in Appendix A. You will also need to refer to the manual for your particular printer.

## PART 2: INSTALLING AN OPEN-APPLE H PRINTER

Some activities in this workbook will ask you to use the Open-Apple H command to get a copy of what's on your screen. All information on the screen will be printed: text, prompts, dotted lines and all. To receive a screen printout, you must identify which printer you intend to use. Let's examine this set up process.

1. Begin at the Printer Information screen.
2. Select: 1. Open-Apple-H printer ........................................ press **RETURN**

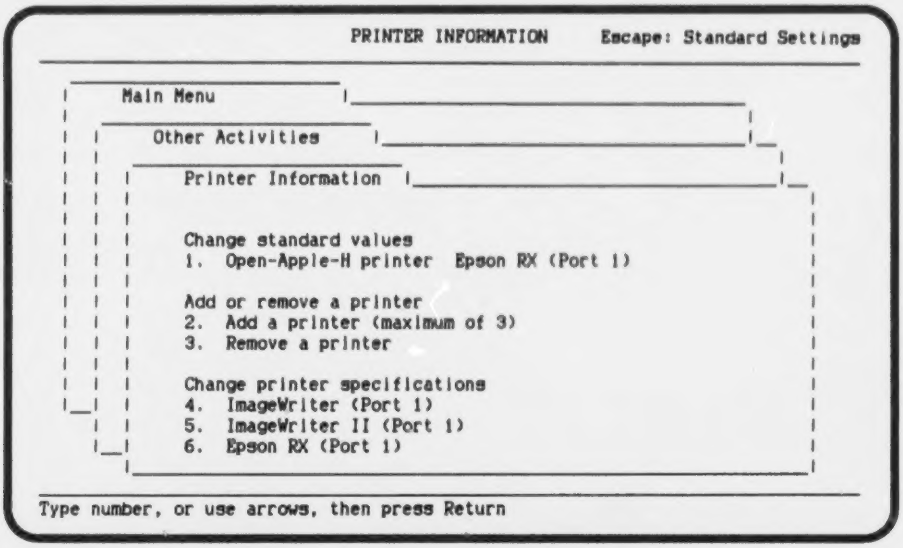
*AppleWorks* displays a list of installed printers:



```
                                 9-H PRINTER       Escape: Printer Information

       Main Menu
          Other Activities
             Printer Information
                9-H Printer

                          1.  ImageWriter (Port 1)

                          2.  ImageWriter II (Port 1)

                          3.  Epson RX (Port 1)

Type number, or use arrows, then press Return
```

3. Select: 3. Epson RX (Port 1)............................................ press **RETURN**

*AppleWorks* again displays the Printer Information menu, indicating the new Open-Apple H printer:



```
                            PRINTER INFORMATION     Escape: Standard Settings

       Main Menu
          Other Activities
             Printer Information

                Change standard values
                1.  Open-Apple-H printer  Epson RX (Port 1)

                Add or remove a printer
                2.  Add a printer (maximum of 3)
                3.  Remove a printer

                Change printer specifications
                4.  ImageWriter (Port 1)
                5.  ImageWriter II (Port 1)
                6.  Epson RX (Port 1)

Type number, or use arrows, then press Return
```

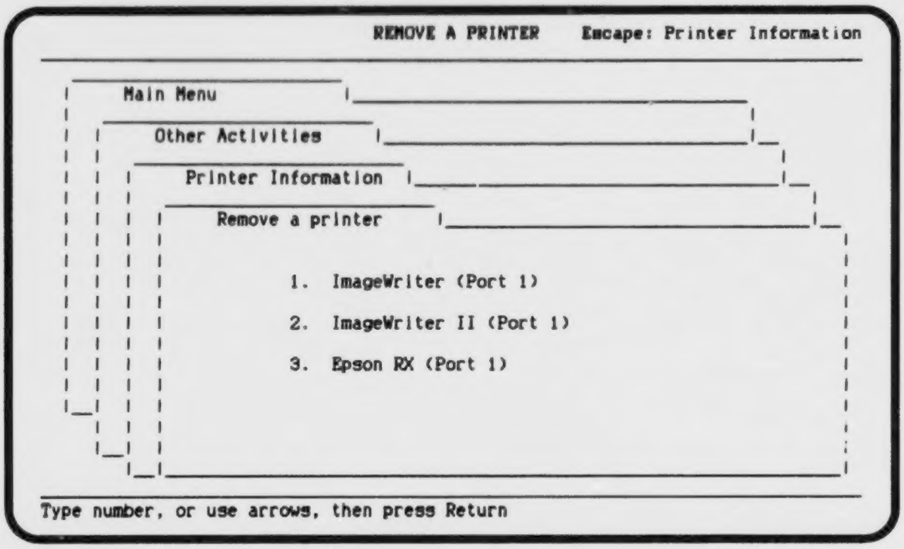
4. Repeat step 1, 2, and 3, now selecting your printer from the list.

When done, *AppleWorks* returns you to the Printer Information menu.

## PART 3: REMOVING A PRINTER

1. Begin at the Printer Information menu.
2. Select: 3. Remove a printer ............................................ press **RETURN**

*AppleWorks* displays a list of printers that have been added:



REMOVE A PRINTER
Escape: Printer Information
Main Menu
Other Activities
Printer Information
Remove a printer

1. ImageWriter (Port 1)
2. ImageWriter II (Port 1)
3. Epson RX (Port 1)

Type number, or use arrows, then press Return

3. Select: Epson RX ........................................................ press **RETURN**

*AppleWorks* removes the printer and returns you to the Printer Information menu.

If you will not be working with an Apple ImageWriter I or II, you will want to add the printer you do have by following the instructions in Part I.

If your printer is not on the *AppleWorks'* list, check your printer manual to find out whether it can emulate a printer that is on the list.

If you need to set up a custom printer, refer to your printer manual for the correct printer codes.

This is all we need to do for the printer setup.

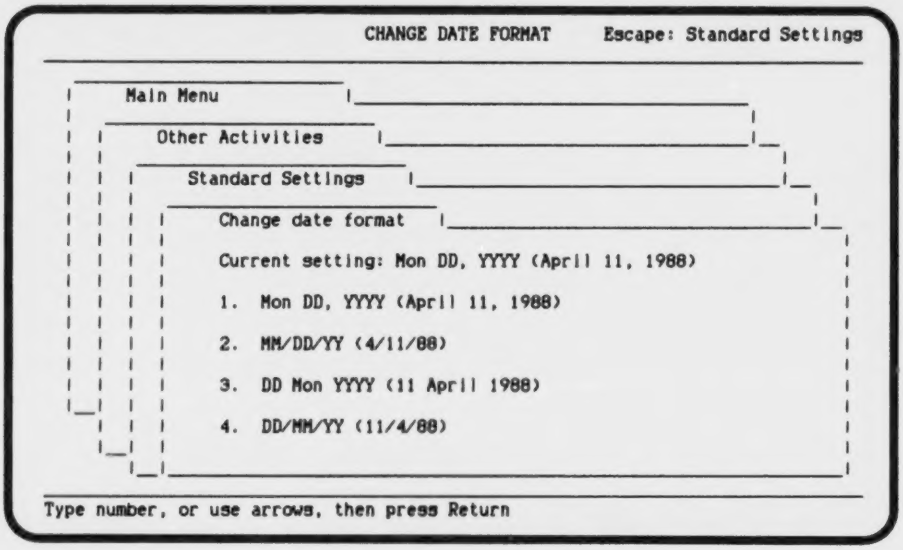
4. Press Escape to return to the Standard Settings screen.
5. Press Escape to return to the Other Activities screen.
6. Press Escape to return to the Main Menu.

# ACTIVITY 4
# CHANGING DATE AND TIME FORMATS

You can set the way you want *AppleWorks* to display the date and time in the Word Processor and Database modules. And one more time we will work through the options within the Other Activities menu choice.

## PART 1: CHANGING THE DATE FORMAT

1. Begin at the Main Menu.
2. Select: 5. Other Activities .................................................... press **RETURN**
3. Select: 6. Select standard settings for AppleWorks...................... press **RETURN**
4. Select: 3. Change date format ............................................. press **RETURN**

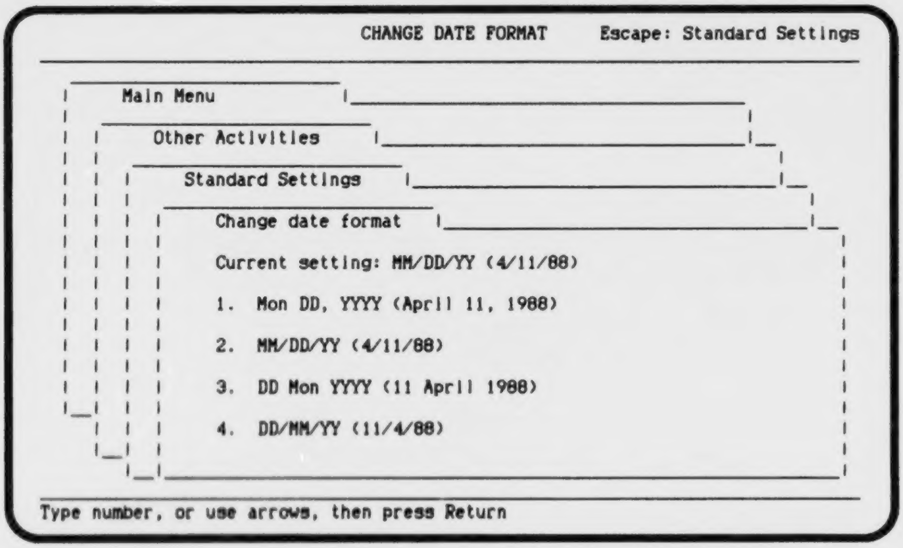


```
                         CHANGE DATE FORMAT     Escape: Standard Settings

Main Menu
  Other Activities
    Standard Settings
      Change date format

      Current setting: Mon DD, YYYY (April 11, 1988)

      1.  Mon DD, YYYY (April 11, 1988)
      2.  MM/DD/YY (4/11/88)
      3.  DD Mon YYYY (11 April 1988)
      4.  DD/MM/YY (11/4/88)

Type number, or use arrows, then press Return
```

**NOTE:** "Current Setting" at the top of the Change Date Format screen: When using the Database, the date will appear in a "Date"-related category, as shown here.

- In the Word Processor, *AppleWorks* will *always* spell out the full name of the month—"January"—rather than "Jan" as it would be displayed on this screen.
- If selecting the MM/DD/YY or DD/MM/YY format, the "Current Setting" reflects how the date will appear in both the Database and Word Processor.

5. The first date setting, Mon, DD,YYY (April 11, 1988) is the *AppleWorks* default setting.
6. Select: 2. MM/DD/YY (4/11/88) ........................................... press **RETURN**
7. Again select: 3. Change date format ....................................... press **RETURN**
8. Again note the "Current Setting" at the top of the screen:



```
                         CHANGE DATE FORMAT     Escape: Standard Settings
---------------------------------------------------------------------------
  ____________________
 |    Main Menu       |______________________________
 |   ____________________                            |
 |  |   Other Activities  |__________________________|_
 |  |   ____________________                           |
 |  |  |   Standard Settings  |________________________|_
 |  |  |   ____________________                          |
 |  |  |  |   Change date format  |______________________|_
 |  |  |  |                                                |
 |  |  |  |   Current setting: MM/DD/YY (4/11/88)          |
 |  |  |  |                                                |
 |  |  |  |   1.  Mon DD, YYYY (April 11, 1988)            |
 |  |  |  |                                                |
 |  |  |  |   2.  MM/DD/YY (4/11/88)                       |
 |  |  |  |                                                |
 |__|  |  |   3.  DD Mon YYYY (11 April 1988)              |
    |  |  |                                                |
    |__|  |   4.  DD/MM/YY (11/4/88)                       |
       |  |                                                |
       |__|________________________________________________|
---------------------------------------------------------------------------
Type number, or use arrows, then press Return
```

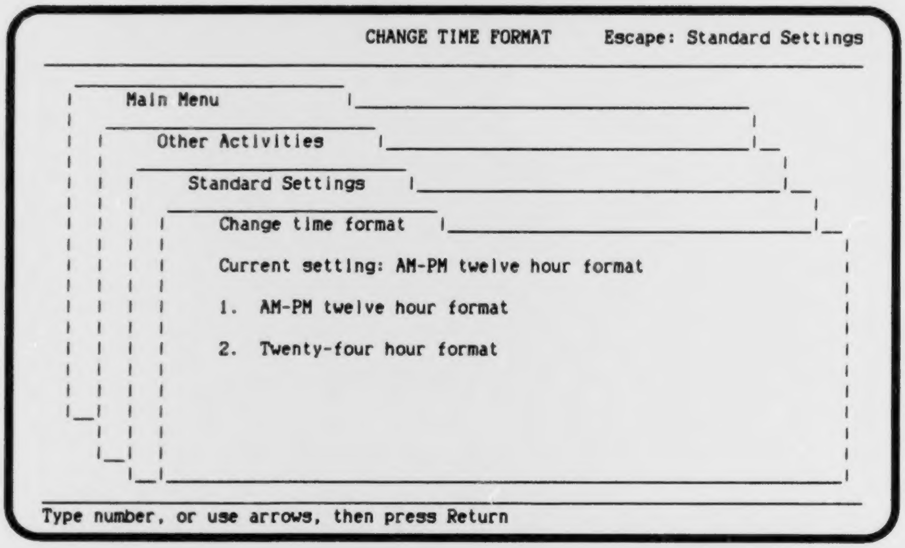
9. To switch to another date format setting, this process would be repeated.
10. Change back to the Mon, DD,YYY (April 11, 1988) setting.

You will again be returned to the Standard Settings menu.

11. Press Escape to return to the Main Menu. This setting has now been saved as part of the *AppleWorks* startup.

## PART 2: CHANGING THE TIME FORMAT

1. Begin at the Main Menu.
2. Select: 5. Other Activities.............................................. press **RETURN**
3. Select: 6. Select standard settings for AppleWorks..................... press **RETURN**
4. Select: 4. Change time format ........................................ press **RETURN**



```
                              CHANGE TIME FORMAT     Escape: Standard Settings

       Main Menu
         Other Activities
           Standard Settings
             Change time format

             Current setting: AM-PM twelve hour format

             1.  AM-PM twelve hour format

             2.  Twenty-four hour format

Type number, or use arrows, then press Return
```

5. Note the "Current Setting" at the top of this screen. This is the way *AppleWorks* displays times now.
6. The first date setting, AM-PM twelve hour format is the *AppleWorks* default setting.
7. Select: 2. Twenty-four hour format ....................................... press **RETURN**
8. Again select: 4. Change time format ....................................... press **RETURN**
9. Again note the "Current Setting" at the top of the screen.
10. To switch to another date format setting, this process would be repeated.
11. Change back to the AM-PM twelve hour format setting.

You will again be returned to the Standard Settings menu.

12. Press Escape until you return to the Main Menu.

This setting has now been saved as part of the *AppleWorks* startup.

With these "housekeeping" tasks completed you are now ready to begin the workbook activities. You can begin working in any chapter. Remember, save your work on your newly formatted data disk.

# CHAPTER ONE

## THE WORD PROCESSOR

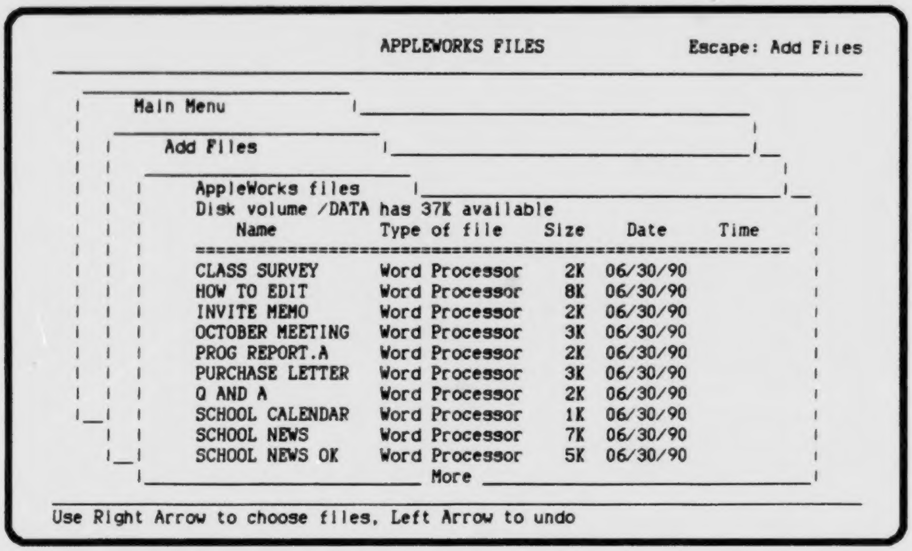
The following set of activities provides an overview of the basic editing features for the *AppleWorks* word processor. These activities have been designed for you and your partner to try out various methods for making corrections and revisions. Common editing features include:

- Using the Delete key to erase characters;
- Using the Insert cursor to add characters;
- Using the Overstrike cursor to type over existing text;
- Using the Open-Apple D (Delete) feature to erase;
- Using the Open-Apple M (Move) feature to rearrange text; and
- Using the Open-Apple R (Replace) feature to exchange text.

## ACTIVITY 1
## CORRECTING WITH THE DELETE KEY

### PART 1: ADDING A WORD PROCESSOR FILE TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop............................................press **RETURN**
3. Select: 1. Get files from the Current Disk....................................press **RETURN**
4. A list of files that have been saved on your data disk will be displayed.

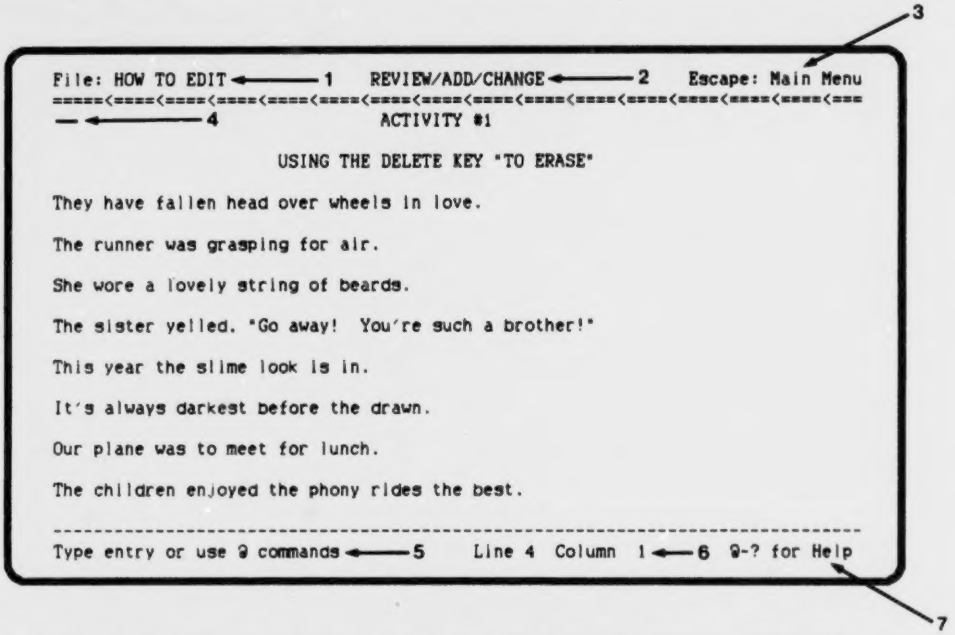


```
                        APPLEWORKS FILES              Escape: Add Files
 ____________________________________________________________________________
  ____________________
 |    Main Menu       |_________________________________
 |   ____________________                               |
 |  |    Add Files       |_________________________________|_
 |  |   ____________________                                |
 |  |  |    AppleWorks files   |_______________________________|_
 |  |  |    Disk volume /DATA has 37K available                  |
 |  |  |        Name           Type of file    Size    Date     Time   |
 |  |  |    ====================================================      |
 |  |  |    CLASS SURVEY       Word Processor   2K  06/30/90          |
 |  |  |    HOW TO EDIT        Word Processor   8K  06/30/90          |
 |  |  |    INVITE MEMO        Word Processor   2K  06/30/90          |
 |  |  |    OCTOBER MEETING    Word Processor   3K  06/30/90          |
 |  |  |    PROG REPORT.A      Word Processor   2K  06/30/90          |
 |  |  |    PURCHASE LETTER    Word Processor   3K  06/30/90          |
 |  |  |    Q AND A            Word Processor   2K  06/30/90          |
 |__|  |    SCHOOL CALENDAR    Word Processor   1K  06/30/90          |
    |  |    SCHOOL NEWS        Word Processor   7K  06/30/90          |
    |__|    SCHOOL NEWS OK     Word Processor   5K  06/30/90          |
       |_______________________ More ______________________________|
 ____________________________________________________________________________
 Use Right Arrow to choose files, Left Arrow to undo
```

5. We will work with HOW TO EDIT.
   To select that file, type a Right Arrow ( --> ) beside the file name HOW TO EDIT.

6. Press Return.

7. When this file has been loaded into the computer, the activity on the following page will appear on the screen.



```
File: HOW TO EDIT          REVIEW/ADD/CHANGE          Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
—                               ACTIVITY #1

                    USING THE DELETE KEY "TO ERASE"

They have fallen head over wheels in love.

The runner was grasping for air.

She wore a lovely string of beards.

The sister yelled. "Go away!  You're such a brother!"

This year the slime look is in.

It's always darkest before the drawn.

Our plane was to meet for lunch.

The children enjoyed the phony rides the best.

--------------------------------------------------------------------------
Type entry or use 9 commands         Line 4  Column  1    9-? for Help
```

## PART 2: EXAMINING THE WORD PROCESSOR SCREEN

Before beginning the first word processor activity, note the *AppleWorks* headings on the top and bottom of the screen. These guides will be on all word processor screens and provide useful information such as the name of your file, cursor location, or what happens when you press the Escape key.

#1. The name of your word processor file, in this case, HOW TO EDIT.

#2. This heading indicates a section of the *AppleWorks* program. You enter and change text on this screen.

#3. This screen heading indicates which section of the program will be displayed if you press the Escape key. Note: If you press the Escape key a second time, you will return to the Review/Add/Change screen.

#4. The blinking line is the word processor cursor and indicates your place on the screen.

#5. This is the word processor prompt. Instructions for working with the word processor appear in this area.

#6. Information in this area refers to the cursor's location on the word processor screen.

#7. This screen guide is a reminder that pressing the Open-Apple and Question Mark keys will display a Help screen. Try this command. When done, press Escape to return to Review/Add/Change.

Your cursor is currently positioned on Line 4, Column 1. Lines 1 through 3 contain printer commands that are not currently displayed on screen. You will learn about printer options in the next chapter.

## PART 3: USING THE DELETE KEY

1. Make sure the Caps Lock key is up; you will be using both upper and lower case.
2. There are 10 sentences in this first activity. Each contains a word usage error.
3. For each sentence to read correctly use the Delete key.

**To make these corrections:**

1. Use the Down Arrow key to move the cursor to each sentence on the screen.

**NOTE**: As you move the cursor down, new sentences will scroll onto the screen, and sentences at the top of the screen will scroll off.

2. Use Right and Left Arrow keys to move the cursor between the words and letters in each sentence.
3. Use the Delete key to erase (remove) extra characters. Place the blinking cursor to the *right* of the extra letter, and press the Delete key.

e.g.: CHRISTMAAS (place the cursor here then press Delete)

4. When these sentences have been edited, move the cursor to the blank line below the last sentence.

5. Create two blank lines on the screen by pressing the Return key twice.

6. Next, type the word list to the right: ------------------------------> Be sure to press Return after each word. Hint: Use the Space Bar to leave a space before numbers 1 through 9, and then the decimal points will line up throughout the list.

 1. maid
 2. weary
 3. niece
 4. horse
 5. quiet
 6. mean
 7. pretty
 8. scent
 9. knew
10. bath
11. blender
12. crust
13. racing
14. beard
15. grapple

7. When done, delete one *or more* characters from each to make the new words defined below.

1. angry (Delete the "i" in maid to make mad.)
2. cautious
3. pleasant
4. rubber tubing
5. to finish
6. male
7. trivial
8. one penny
9. recent
10. vampire
11. curved part of a stream
12. an Oregon tan
13. falling water
14. a place to sleep
15. brand name computer

# ACTIVITY 2
# USING THE INSERT CURSOR TO ADD CHARACTERS

## PART 1: USING THE INSERT CURSOR

1. Use the Down Arrow key to bring ACTIVITY #2 onto the screen:

### ACTIVITY #2
### WORKING WITH THE INSERT CURSOR

The cat mowed until three in the morning.

Birds of a father flock together.

They were marred in a simple service.

In the military, officers must be salted.

They asked for a set on the isle.

Cold hands, warm heat.

We waited for ours and ours.

During the storm tree houses were without electricity.

The golfer said, "You go third, I'll go forth."

The young priest wore new shoes and holy socks.

The bride over the river was singing from side to side.

2. Add the missing letters to correct this set of sentences. Some sentences will have more than one correction.

**To make these corrections:**

1. Place the cursor (the blinking line) exactly where you want the letter, and then type.

   e.g.: CHRISMAS (place the cursor here, type a letter T.)

2. Hint: Try using the Open-Apple and an Arrow key to move from word to word. Use only the Arrow keys to move the cursor from letter to letter.

3. When these sentences have been edited, move the cursor to the blank line below the last sentence.

4. Create two blank lines on the screen by pressing the Return key twice.

5. Next type this word list: ------------------------------------------->

   1. sad
   2. sap
   3. dying
   4. hair
   5. pain
   6. sippers
   7. sale
   8. book
   9. pant
   10. cot
   11. air
   12. horse
   13. side
   14. come
   15. eat

6. When done, insert one or more characters in each word to make the new words defined below:

   1. spoke (Add an "i" after the "a" in sad to make said.)
   2. to break suddenly
   3. coloring
   4. has arms and legs, but no head
   5. not fancy
   6. shoes made from banana peels
   7. week-old bread
   8. small stream
   9. not animal or mineral
   10. land near the ocean
   11. table and ___________
   12. voiceless
   13. playground equipment
   14. Halley's
   15. grain for making bread

7. Using the Insert cursor, go back through the two lists of *sentences* in Activity 1 and Activity 2 and number them, from 1 to 21. You can use the up arrow key to scroll back to Activity 1.

# ACTIVITY 3
# USING THE OVERSTRIKE CURSOR TO REPLACE CHARACTERS

## PART 1: USING THE OVERSTRIKE CURSOR (Open-Apple E)

1. Use the Down Arrow key to bring ACTIVITY #3 onto the screen:

**ACTIVITY #3**
**USING THE OVERSTRIKE CURSOR TO REPLACE CHARACTERS**

1. trial
2. tomb
3. pedal
4. birth
5. beat
6. steel
7. snack
8. hunch
9. sliver
10. match
11. suffer
12. presence
13. depleted
14. chicken
15. celery

2. Begin by pressing Open-Apple E (to Edit).

3. Note that the cursor has changed to a blinking rectangle.

4. You will need to position this Overstrike cursor on top of the letter you want to replace, and then type.

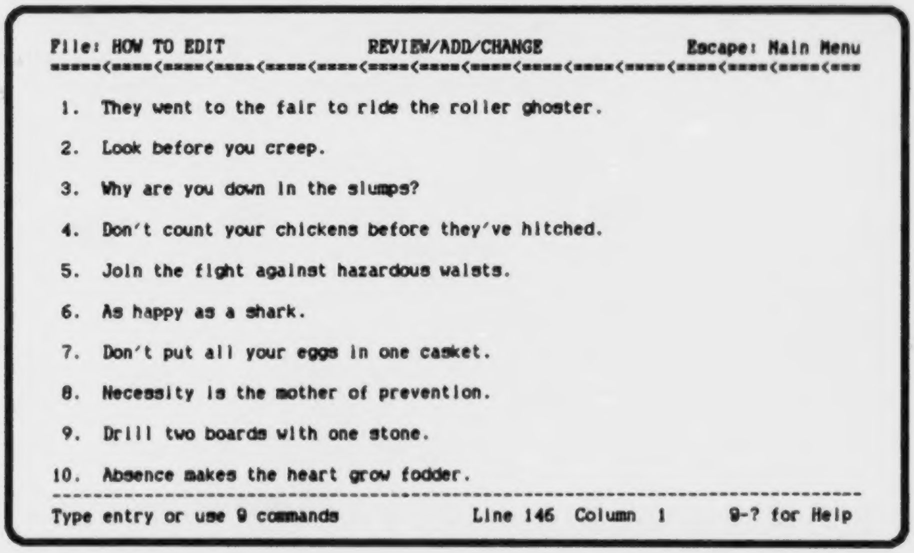
5. Note: You will need to use the Arrow keys to move "over" any characters you do not want changed.

6. Be careful with the Space Bar. This cursor will not insert a space, but will *overstrike* with a space.

7. Replace one or more characters in each word to make the following:

    1. well traveled path
    2. has teeth, but never eats
    3. part of a flower
    4. bed on a train
    5. vegetable
    6. to take
    7. a duck sound
    8. one thing you can't have for breakfast or dinner
    9. a white metal
    10. portable timepiece
    11. last meal
    12. a gift
    13. not victorious
    14. room for cooking
    15. income or earnings

8. When done, use the Down Arrow key to bring the next 10 sentences onto the screen:



```
File: HOW TO EDIT              REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===

 1.  They went to the fair to ride the roller ghoster.

 2.  Look before you creep.

 3.  Why are you down in the slumps?

 4.  Don't count your chickens before they've hitched.

 5.  Join the fight against hazardous waists.

 6.  As happy as a shark.

 7.  Don't put all your eggs in one casket.

 8.  Necessity is the mother of prevention.

 9.  Drill two boards with one stone.

10.  Absence makes the heart grow fodder.
--------------------------------------------------------------------------------
Type entry or use 9 commands            Line 146  Column  1      9-? for Help
```

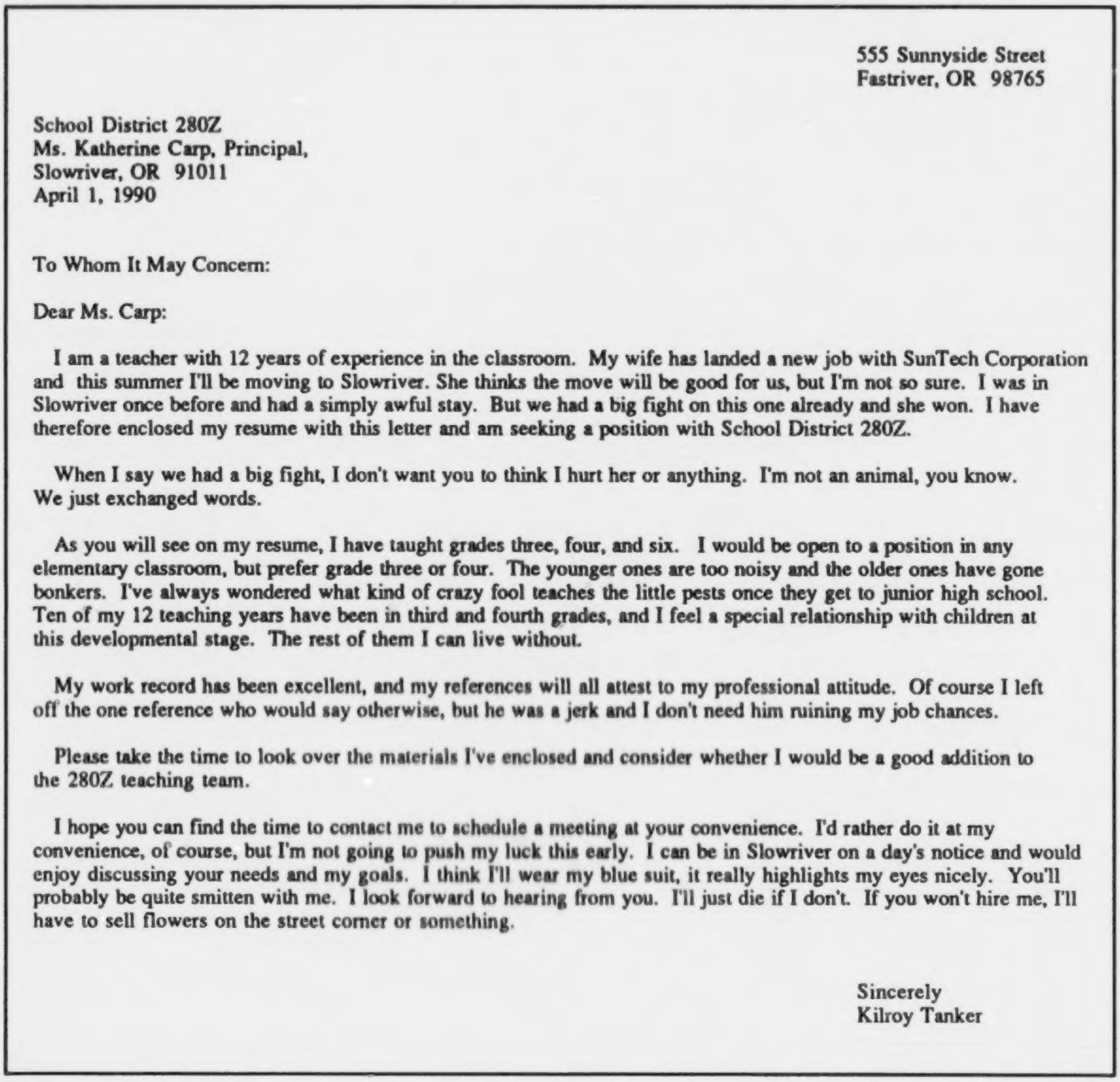
9. Make corrections as they're needed.

10. When finished correcting, switch back to the Insert cursor by pressing Open Apple-E again.

# ACTIVITY 4
# DELETING BLOCKS OF TEXT

## PART 1: DELETING BLOCKS OF TEXT (Open-Apple D)

1. Use the Down Arrow key to bring ACTIVITY #4 onto the screen:



555 Sunnyside Street
Fastriver, OR 98765

School District 280Z
Ms. Katherine Carp, Principal,
Slowriver, OR 91011
April 1, 1990

To Whom It May Concern:

Dear Ms. Carp:

I am a teacher with 12 years of experience in the classroom. My wife has landed a new job with SunTech Corporation and this summer I'll be moving to Slowriver. She thinks the move will be good for us, but I'm not so sure. I was in Slowriver once before and had a simply awful stay. But we had a big fight on this one already and she won. I have therefore enclosed my resume with this letter and am seeking a position with School District 280Z.

When I say we had a big fight, I don't want you to think I hurt her or anything. I'm not an animal, you know. We just exchanged words.

As you will see on my resume, I have taught grades three, four, and six. I would be open to a position in any elementary classroom, but prefer grade three or four. The younger ones are too noisy and the older ones have gone bonkers. I've always wondered what kind of crazy fool teaches the little pests once they get to junior high school. Ten of my 12 teaching years have been in third and fourth grades, and I feel a special relationship with children at this developmental stage. The rest of them I can live without.

My work record has been excellent, and my references will all attest to my professional attitude. Of course I left off the one reference who would say otherwise, but he was a jerk and I don't need him ruining my job chances.

Please take the time to look over the materials I've enclosed and consider whether I would be a good addition to the 280Z teaching team.

I hope you can find the time to contact me to schedule a meeting at your convenience. I'd rather do it at my convenience, of course, but I'm not going to push my luck this early. I can be in Slowriver on a day's notice and would enjoy discussing your needs and my goals. I think I'll wear my blue suit, it really highlights my eyes nicely. You'll probably be quite smitten with me. I look forward to hearing from you. I'll just die if I don't. If you won't hire me, I'll have to sell flowers on the street corner or something.

Sincerely
Kilroy Tanker

2. This correspondence needs some major editing. Some sections will be removed.

To delete blocks of text with the Open-Apple D command follow these steps:

1. Use an Arrow key to position the cursor on the first letter you want to erase.
2. Press Open-Apple D. The squares (Return blots) that next appear on the screen represent where the Return key has been pressed.
3. Use an Arrow key to *highlight* exactly what you want erased.
4. Then press Return.
5. Correct capitalization and necessary spacing after making deletions in each section.

3. Now use the Open-Apple D command, as outlined above, to make the following corrections:

   a. Erase the line "To Whom It May Concern:" and the blank line below it.

   b. In the first paragraph erase everything from "She thinks the move" through "and she won."

   c. Delete the entire second paragraph "When I say we . . . ."

   d. Delete extra Returns so there is only a single blank line above the paragraph, "As you will see. . . ."

   e. In the next paragraph erase the sentences that begin:
   "The younger ones are too noisy . . .," "I've always wondered . . .," and
   "The rest of them . . . ."

   f. In the third paragraph delete the sentence "Of course."

   g. Delete the Returns to combine the third and fourth paragraphs. "My work record." and "Please take the time. . ." should now be one paragraph.

   h. In the last paragraph, erase the sentences that begin "I'd rather do it at. . .," "I think I'll wear . . .," and "You'll probably be quite smitten. . . ." And delete the last two sentences beginning "I'll just die . . . ."

   i. Erase "Kilroy Tanker" and replace with your name(s).
   Hint: Place the cursor on the letter K and press Open-Apple Y—it will erase everything to the end of the line.

j. Use Open-Apple Y again to replace "Ms. Carp:" with another name.

**NOTE**: While keystrokes used for many of the Open Apple commands correspond with the actions they perform (Save, Print, Delete, etc;), sometimes *AppleWorks* uses seemingly unrelated letters because the more appropriate letters have already been taken. Open-Apple-Y appears to be one example of this, but the Y actually could stand for Yank.

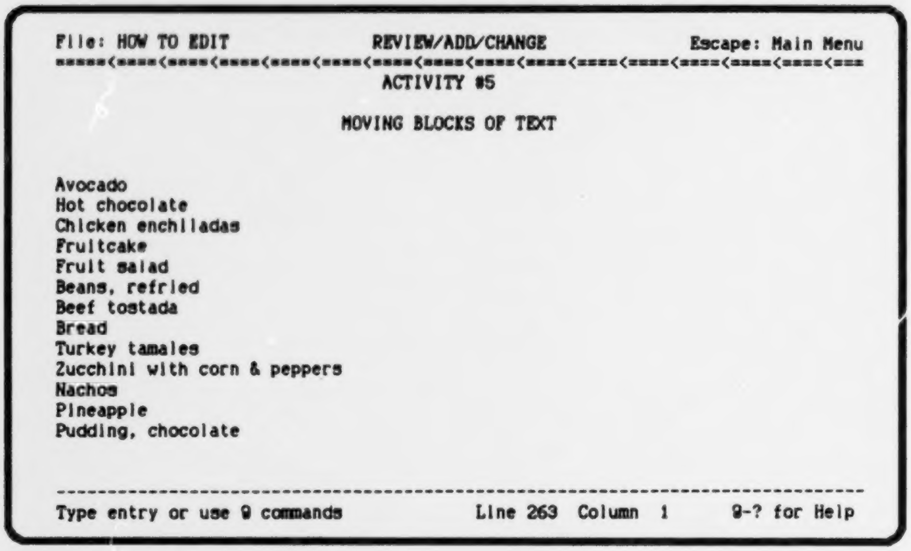
**NOTE**: Control Y will also remove text to the end of the line.

4. Use Open-Apple S to save all the revisions you have made to this HOW TO EDIT file. Be sure to remove your AppleWorks for Educators data disk and save onto your new BACKUP disk! This save will include *all* changes you have made thus far, Activities 1 through 4.

# ACTIVITY 5
# MOVING BLOCKS OF TEXT

## PART 1: MOVING BLOCK OF TEXT (Open-Apple M)

1. Use the Down Arrow key to bring ACTIVITY #5 onto the screen:



```
File: HOW TO EDIT              REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
                                  ACTIVITY #5

                             MOVING BLOCKS OF TEXT


Avocado
Hot chocolate
Chicken enchiladas
Fruitcake
Fruit salad
Beans, refried
Beef tostada
Bread
Turkey tamales
Zucchini with corn & peppers
Nachos
Pineapple
Pudding, chocolate


-------------------------------------------------------------------------------
Type entry or use @ commands          Line 263  Column  1        @-? for Help
```

2. The food list on the screen needs to be arranged in alphabetical order. Move individual lines or blocks to make corrections:

   a. Place the cursor on the first character of Chicken enchiladas. We will move this line under Avocado.

   b. Press Open-Apple M (for Move).

   c. Select: Within Document.................................................press **RETURN**
   Note that when you press Return the screen appears in the zoomed-in format. Blots indicating where each Return was pressed will now be displayed.

   d. Use an Arrow key to move the cursor to the end of Chicken enchiladas.

   e. Be sure to highlight the return Blot—it must go with the move. If it stays, it will create a blank space in your list.

f. Press Return.

g Move the cursor to where you want to move this food item. In this case, we will put the cursor right *on top* of the "H" of Hot chocolate so that the "H" is blinking.

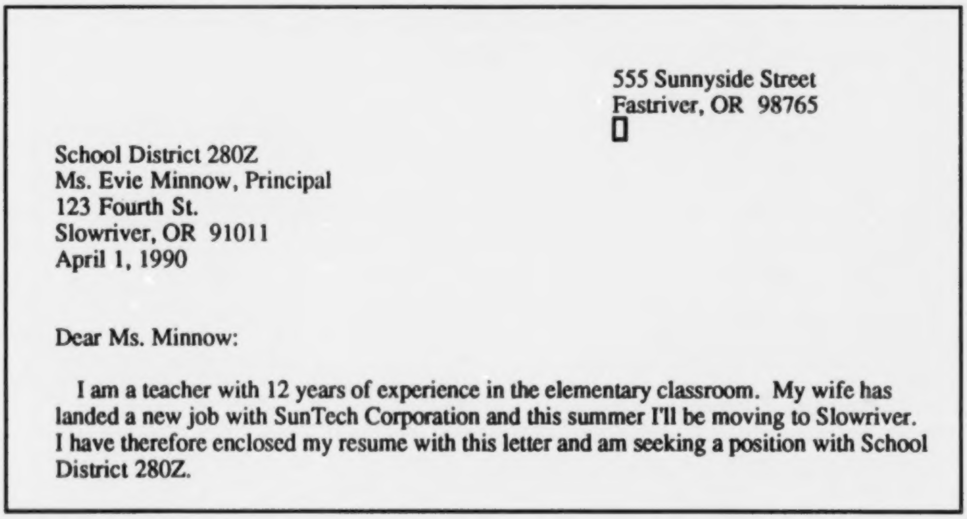
h. Press Return. Your list should read:

Avocado
Chicken enchiladas
Hot chocolate

i. Continue using Open-Apple M to rearrange this food list until it is in order.

## PART 2: INSTRUCTIONS FOR ACTIVITY #5-B

1. Use the Up Arrow key to bring the Activity #4 letter back to the screen:



555 Sunnyside Street
Fastriver, OR 98765
▯

School District 280Z
Ms. Evie Minnow, Principal
123 Fourth St.
Slowriver, OR 91011
April 1, 1990

Dear Ms. Minnow:

I am a teacher with 12 years of experience in the elementary classroom. My wife has landed a new job with SunTech Corporation and this summer I'll be moving to Slowriver. I have therefore enclosed my resume with this letter and am seeking a position with School District 280Z.

Try the next three moves:

2. Move the row now containing the principal name you entered in Activity 4 (e.g., "Ms. Evie Minnow, Principal") directly above "School District 280Z."
3. Next you will use the Open-Apple M command to move "April 1, 1990" underneath "Fastriver, OR 98765"—which is not as easy as you might expect:
   a. Press Open-Apple Z to turn on the Zoom so you can view all Return blots.
   b. Move the cursor to the *blank line* under "Fastriver, OR 98765." Place the cursor in column 1 on the Return blot.
   c. Next tap the Space Bar (not the Arrow key) until the cursor is positioned under the "F" of "Fastriver."

d. Press Return. A Return blot will remain on the line.

e. Next use an Arrow key to position the cursor on the "A" of "April".

f. Now use the Open-Apple M command to move this date to the Return blot you left on the line under "Fastriver."

4. Use Open-Apple M to rearrange the sentence, "My wife has landed a new job with SunTech Corp and this summer I'll be moving to Slowriver." to read "This summer I'll be moving to Slowriver, where my wife has landed a new job with SunTech Corporation."

5. Adjust for capitalization and spacing.

6. Save this revised HOW TO EDIT file.

# ACTIVITY 6
# FINDING AND REPLACING TEXT

## PART 1: FINDING AND REPLACING TEXT (Open-Apple R)

1. Use the Down Arrow key to bring ACTIVITY #6 onto the screen:

> **ACTIVITY #6**
> **USING OPEN-APPLE R TO EXCHANGE TEXT**
>
> And now for sports . . . .
>
> The Walla Walla Wildcats beat the Plainsville Pirates Friday night, after beating the previously unbeaten Bolder Blazers in a good game Thursday night, at the NORTHSIDE TOURNAMENT. The Walla Walla Wildcats used a fast break and good defense in the first quarter to upset the Plainsville Pirates. As play continued, forward Freddie "Fastbreak" Fielding dribbled down and around the court scoring the final basket beating the halftime buzzer.
>
> In the second half the Plainsville Pirates caught up, with good offensive rebounding and heads-up play, but the Walla Walla Wildcats beat the odds and regained the lead with outside shooting, winning 78-72.
>
> The Walla Walla Wildcats continue with tournament play tommorow. The tournament is expected to draw over 5,000 spectators when the Wildcats meet the Brookside Beatnicks in the championship game Saturday night. NORTHSIDE TOURNAMENT sponsors are very pleased with the results of this year's tourney.

2. Next we will use the Open-Apple R command (for Find and Replace) to quickly change this sports report.

3. Change "Plainsville Pirates" to "Bucs."
   Follow these instructions:

   a. Move the cursor to the beginning (top) of this sports report.

   b. Press Open-Apple R (for Replace).

   c. Note the questions at the bottom of the screen.

d. Select: Text........................................................................ ...press **RETURN**

e. For "Replace what?" type: Plainsville Pirates ........................... ...press **RETURN**

f. For "Replace with what?" type: Bucs ........................................ ...press **RETURN**

g. Select: One at a Time ............................................................ ...press **RETURN**
Note: *AppleWorks* will highlight the first occurrence of the text to be found, e.g., "Plainsville Pirates."

h. Select: Yes. Note that the replacement has occurred.

i. For "Find next occurrence?" select: Yes.

j. Continue answering *yes* until all "Plainsville Pirates" have been replaced.

k. When the "Not found" message appears at the bottom of the screen, press the Space Bar to continue.

4. Change "good" to "fantastic":

a. Move the cursor to the beginning of the sports report.

b. Press Open-Apple R.

c. Select: Text........................................................................ ...press **RETURN**

d. For "Replace What?" type: good........................................... ...press **RETURN**

e. Press Open-Apple Y to delete any remaining characters.

f. Press Return.

g. For "Replace with what?" type: fantastic.................................. ...press **RETURN**

h. Press Open-Apple Y to delete any remaining characters.

i. Select: All.......................................................................... ..press **RETURN**
*AppleWorks* will automatically replace all the occurrences of "good" with "fantastic."

5. Change "tournament" to "competition":

a. Move to the top of this report and press Open-Apple R.

b. Select: Case sensitive text ................................................... ..press **RETURN**

c. For "Replace What?" type: tournament (in lower case) ............ ..press **RETURN**

d. For "Replace with what?" type: competition............................ ..press **RETURN**

e. Select: One at a Time.......................................................... ...press **RETURN**

f. Go through the report and change every occurrence.

g. There should be two TOURNAMENTS left in the script? Why?

**Hint:** To find the two "TOURNAMENTS:"

1. Move the cursor to the top of the report.
2. Press Open-Apple F (to Find).
3. Select: Case sensitive text.
4. For "Find what text?" type: TOURNAMENT and press RETURN. The first "TOURNAMENT" in the script should be highlighted.
5. For "Find next occurrence ?" select: Yes. The second "TOURNAMENT" in the script should be highlighted.
6. For "Find next occurrence ?" select: Yes.
7. When no other TOURNAMENT can be located, press the Space Bar.

6. Change "Walla Walla Wildcats" to "Cats":

   a. Leave the first occurrence of "Walla Walla Wildcats." Change all others.

7. Change "beat" to "crush":

   a. You decide how to do it . . ..

   b. Check each occurrence and make appropriate changes.

   c. Check for accuracy (e.g., no "Crushnicks").

8. Save this revised HOW TO EDIT file.

# ACTIVITY 7
# EDITING TEXT (A REVIEW)

## PART 1: INSTRUCTIONS

The final "Fractured Fairy Tale" activity in this lesson is from *ClassWorks*, by Rick Thomas. This packet contains introductory *AppleWorks* activities for middle and high school students and is available through:

International Society for Technology in Education (ISTE)
1787 Agate Street
Eugene, Oregon 97403
503/346-4414

1. Use the Down Arrow key to bring ACTIVITY #7 onto the screen.

The sentences below begin to tell a familiar story—that is, when the spelling and grammar errors are corrected, the extra sentences are deleted, and the remaining sentences are arranged in the right order.

### A Fractured Fairy Tale

Not far from London there once livved a window and her son Jordon. With tears in her eyes the poor woman tolded Jordon to take the cow to the market and get the best price he could for it. Then a day came when they had to sold there cow. "Oh, grandmother, what big ears you have!" cried Little Red Riding Hood. They were so poor and they often didn't have enough to eat and as Jordon was a lazy boy who neffer liked to work, matters grew wurse and wurse for his poor mother. "Rapunzel, Rapunzel, Let down your golden hair." "Yes," answered Jordon, wandering how the stranger knew his name. I will by the cow from you in in exchange for these magic beans." said the man. He had not gone far when he met a man who asked him, "Are you taking your cow to markey, Jordon?" "But i warn you," said the fairy godmother, "that you must leave the ball before midnight." So Jordon, leading the cow, set off.

2. First correct the mistakes in each sentence.
3. Next use Open-Apple M and Open-Apple D to organize the plot. Be sure to check for two spaces at the end of each sentence.
4. Use Open-Apple R to change the main character's name to Jack.

5. Create your own ending.

6. Save your work. Again, be sure to save onto your BACKUP disk!

## PART 2: PRINTING A WORD PROCESSOR FILE (Open-Apple P)

You have spent a lot of time working on this file. Before beginning Activity 8 you will print your revised HOW TO EDIT file and remove it from the Desktop. If you are currently working at a computer/printer station, you can immediately begin to print.

If you need to move to a printer station you will first need to:

1. Load *AppleWorks*.

2. From your BACKUP data disk, add your HOW TO EDIT file to the Desktop.
   You will not need to "make a new file," but merely "Get the file from the current disk drive."

3. When your revised file is back on the screen, you are ready to print.

To print a copy of this word processor file:

1. Turn on the printer and adjust the paper.

2. Press Open-Apple P (to Print).

3. For "Print from?" select: Beginning.........................................press **RETURN**

4. For "Where do you want to print the file?" select the name of your printer...................................................................press **RETURN**

5. For "How many copies?" select: 1 ............................................press **RETURN**

## PART 3: REMOVING A FILE FROM THE DESKTOP

When you have finished printing, you can remove this file from the Desktop:

1. Begin by resaving your file on to your BACKUP disk with Open-Apple S.

2. Escape to the Main Menu.

3. Select: 4. Remove files from the Desktop ....................................press **RETURN**

4. Mark the HOW TO EDIT file with an arrow (---->).
   Note the "Saved" status of this file.

5. Press Return.

6. When the Main Menu reappears on screen, your file will no longer be in the memory of the computer. Of course, it will still be on your data disk.

7. To see which files are in memory, select: 2. Work with one of the files on the Desktop........................................................press **RETURN**

   - If you have *one* file in memory, you will be taken to that file.
   - If you have *no* files in memory, the Desktop Index will indicate "There are no files on the Desktop."
   - If you have more than one file in memory, the Desktop Index will list them and you can highlight which file you would like to work on.

# ACTIVITY 8
# WORD PROCESSING A SAMPLE DOCUMENT

In this exercise you will:

- Use the *AppleWorks* word processor to create (type) a questionnaire form;
- Make a copy of this form for your partner; and
- Store a copy of the blank form (a **template**) on a data disk.

## PART 1: CREATING A WORD PROCESSOR FILE FROM SCRATCH

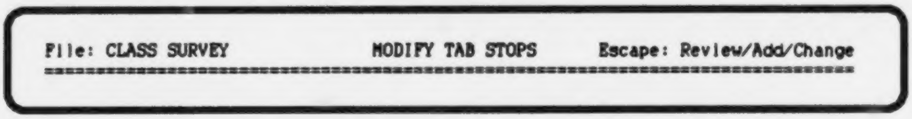
1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop ............................................press **RETURN**
3. Select: 3. Word Processor......................................................press **RETURN**
4. Select: 1. **From scratch**......................................................press **RETURN**
5. For file name type: CLASS SURVEY ........................................press **RETURN**

## PART 2: SETTING & CLEARING TAB STOPS (Open-Apple T)

First we will set some Tab stops. These preset tab settings appear in the ruler line at the top of the screen as "less than" symbols every five spaces. Each *AppleWorks* word processor document starts with one preset ruler.

```
=====<====<====<====<====<====<====<====<====<====<===<====
```

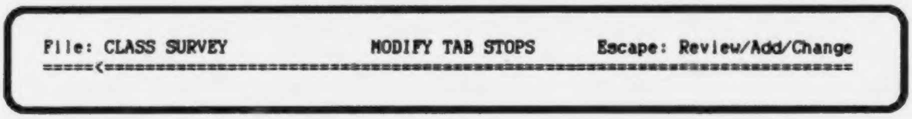
1. Press Open-Apple T (for Tab Stops).
   According to the bottom of the screen, you can either:
   - Modify the current ruler, or
   - Create a new one.
2. You will modify the current ruler, so press Return.
3. At the bottom of the screen you now have six Tab options, and a column number indicator.



```
File: CLASS SURVEY            MODIFY TAB STOPS      Escape: Review/Add/Change
================================================================================
```

5. With the right arrow key, move the cursor to column 6. Use the **column indicator** in the bottom right-hand corner of the screen as your guide.

6. Type: L (to set a Left tab stop).
   Note the top of the screen. A left ( " < " ) Tab stop has been set:



```
File: CLASS SURVEY            MODIFY TAB STOPS      Escape: Review/Add/Change
=====<==========================================================================
```

**NOTE**: Any text set with this Tab Stop will now appear **left justified**:

Jane Anna Cooran
Jack Hunter
Kilroy Tanker

By comparison, text set using the Right Tab would appear **right justified**:

Jane Anna Cooran
Jack Hunter
Kilroy Tanker

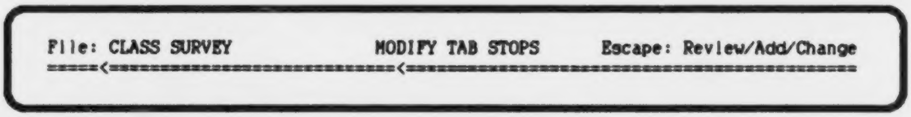
Center Tabs would align text to the **center**:

Jane Anna Cooran
Jack Hunter
Kilroy Tanker

And decimal tabs align **decimal points**:

59.95
3.50
98.5559

7. Move the cursor to column 35 and again type: L.
8. Note the change in the ruler at the top of the screen:



```
File: CLASS SURVEY              MODIFY TAB STOPS      Escape: Review/Add/Change
=====<============================<=============================================
```

9. Press Escape to return to the Review/Add/ Change screen.
   We are finished clearing and setting tabs, for now. We will further examine this feature in Chapter 2.

## PART 3: ENTERING TEXT

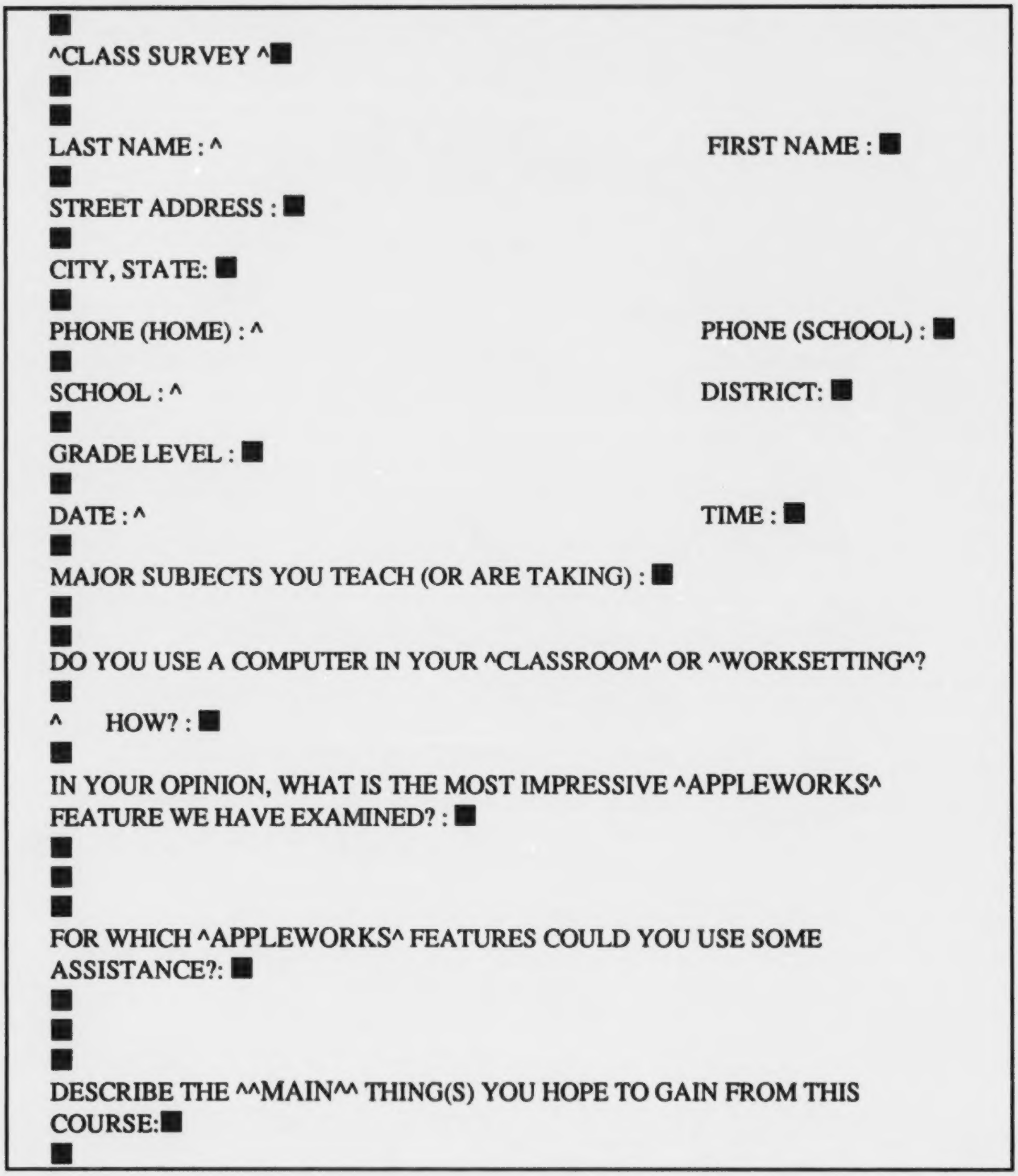
1. For this first section make sure you are using the *Insert* cursor (the blinking line), not the *Overstrike* cursor (the blinking rectangle).
2. Refer to the sample CLASS SURVEY as a guide.

In the sample on the next page the "squares" at the beginning of blank lines and at the end of some lines represent the **Return blots**. With a word processor you will only need to press the Return key when you:

1. Want to stop typing before the end of a line,
2. Want a blank line, or
3. At the end of a paragraph.

3. Press Open-Apple Z (for Zoom) to view the Return blots as you type.
4. Set the Caps Lock key for upper case letters.
5. Type the CLASS SURVEY following the directions in Part 4 for using boldface and underline commands.

6. When done, your screen will look like this:



```
■
^CLASS SURVEY ^■
■
■
LAST NAME : ^                                      FIRST NAME : ■
■
STREET ADDRESS : ■
■
CITY, STATE: ■
■
PHONE (HOME) : ^                                   PHONE (SCHOOL) : ■
■
SCHOOL : ^                                         DISTRICT: ■
■
GRADE LEVEL : ■
■
DATE : ^                                           TIME : ■
■
MAJOR SUBJECTS YOU TEACH (OR ARE TAKING) : ■
■
■
DO YOU USE A COMPUTER IN YOUR ^CLASSROOM^ OR ^WORKSETTING^?
■
^    HOW? : ■
■
IN YOUR OPINION, WHAT IS THE MOST IMPRESSIVE ^APPLEWORKS^
FEATURE WE HAVE EXAMINED? : ■
■
■
■
FOR WHICH ^APPLEWORKS^ FEATURES COULD YOU USE SOME
ASSISTANCE?: ■
■
■
■
DESCRIBE THE ^^MAIN^^ THING(S) YOU HOPE TO GAIN FROM THIS
COURSE:■
■
```

## PART 4: SETTING BOLDFACE AND UNDERLINE COMMANDS (Control B, Control L)

1. Begin by typing the title CLASS SURVEY. To have this title printed in boldface type, complete these steps:
    a. First place the cursor where you want to type. (Line 2, Column 1)
    b. Next hold down the Control key and press the letter B.
    c. Note a caret symbol (^) on the screen.
    d. Now type: CLASS SURVEY.
    e. Press the Control B keys again.
    f. Move the cursor so it sits on the first caret symbol. Read the bottom of the screen: A message should appear whenever the cursor is on a caret (e.g., Boldface Begin, Boldface End).
2. Move the cursor to the next line and press Return twice. Type the following titles, leaving a blank line between each and TAB where needed:

```
■
LAST NAME : ^                           FIRST NAME : ■
■
STREET ADDRESS : ■
■
CITY, STATE : ■
■
PHONE (HOME) : ^                        PHONE (SCHOOL) : ■
■
SCHOOL : ^                              DISTRICT : ■
■
GRADE LEVEL : ■
■
DATE : ^                                TIME : ■
■
MAJOR SUBJECTS YOU TEACH (OR ARE TAKING) : ■
```

3. For the sentence DO YOU USE A COMPUTER IN YOUR CLASSROOM OR WORKSETTING? use the **Control B** printer option so CLASSROOM and WORKSETTING will print in boldface type.
4. As you type the next two sentences, press the **Control** key and the **L** before and after typing the word "APPLEWORKS." When these words are printed, they will be underlined.

5. When typing the word "MAIN" in the last sentence, press Control B *and* Control L, before and after this word.

> **NOTE**: Even with the Caps Lock key down, you will still need to use the Shift key to get some characters, such as the parenthesis symbol.

7. Place the cursor on all four carets to make sure "Boldface Begin" and "End" and "Underline Begin" and "End" appear at the bottom of the screen.

> **NOTE**: With *AppleWorks 3.0* the boldface and underlining commands remain "on" throughout an entire document, unless you turn the setting off with a second Control B or Control L. Previously these commands would have remained in effect only until the paragraph ended. Now you could receive far more underlining or boldface type than you expect, unless you turn these two printer options off.

## PART 5: USING THE APPLEWORKS RULER (Open-Apple 1-9)

You should now be at the bottom of your questionnaire. *AppleWorks* provides a Ruler allowing you to quickly move the cursor through the file.

1. Rather than use the Up Arrow key to return to the top of this file, press Open-Apple 1.

> The Ruler moves the cursor proportionately through the file, using numbers 1 through 9:
>
> - Open-Apple 1 takes you to the beginning;
> - Open-Apple 5 takes you about midway; and
> - Open-Apple 9 will take you to the bottom of the file.

2. Experiment with this command. When finished, return the cursor to the top of the file.

## PART 6: COPYING TEXT WITHIN A WORD PROCESSOR DOCUMENT (Open-Apple C)

Next we will make a copy of this form for your partner and place it below the text you just typed.

1. Press Open-Apple C (to Copy Text).
2. Select: Within document ......................................................press **RETURN**
3. Use the Down Arrow key (or the Open-Apple 9 keystrokes), and highlight this entire form. Note the instructions at the bottom of the screen.
4. Press Return when the entire text has been highlighted.
5. The cursor will now be on the last line of this file, the new location, so press Return.
6. To view both copies of the CLASS SURVEY, use either the Down Arrow key or the *AppleWorks* Ruler.
7. We will continue to work on this word processed file in the Printer Option chapter. Press Open-Apple S to save your file--again to your BACKUP data disk.

# CHAPTER TWO

## PRINTER OPTIONS

In Chapter One you created the word processor file, CLASS SURVEY. In that activity you entered printer commands for underlining and printing in boldface type. Otherwise you used the **standard** printer settings for a word processor file:

- Platen Width = 8 inches
- Top Margin = 0
- Right & Left Margins = 1 inch
- Lines per Inch = 6
- Paper Length = 11 inches
- Bottom Margin = 2 inches
- Single Spacing
- Characters per Inch = 10

You can begin to type without changing printer settings—many folks do. When you do decide to use printer option features in your writing, you can set them before you type, as you type, or right before printing. In the following activity we will work with the most common word processor printer options, as you complete the CLASS SURVEY questionnaire at the computer, store the completed form on a data disk, and print the completed form.

## ACTIVITY 1
## BASIC PRINTER OPTIONS

### PART 1: ADDING A WORD PROCESSOR FILE TO THE DESKTOP

If continuing from Chapter 1:

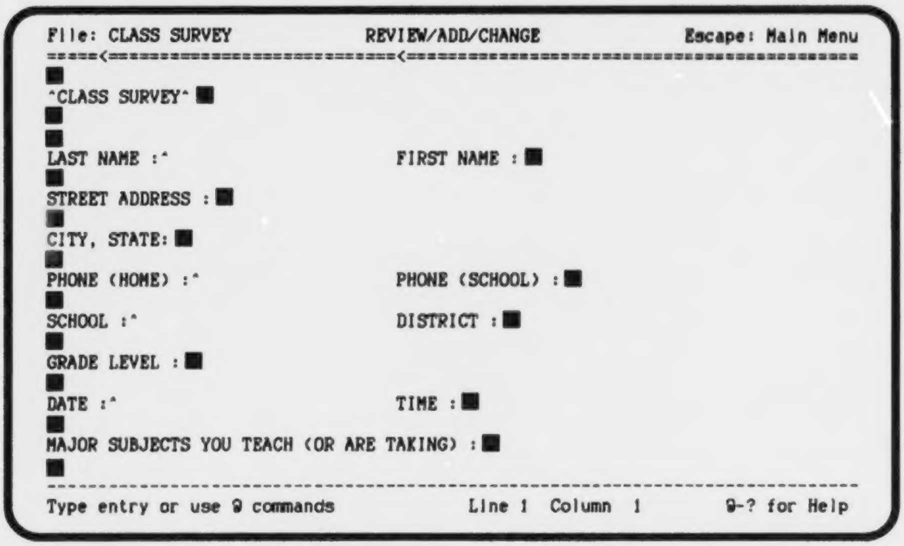
1. Begin at the Main Menu.
2. Select: 2. Work with one of the files on the Desktop .................. press **RETURN**
3. Select: --> CLASS SURVEY ............................................... press **RETURN**

If you have just loaded *AppleWorks*:

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop.......................................... press **RETURN**
3. Select: 1. From the current disk............................................ press **RETURN**

4. Select: --> CLASS SURVEY ............................................... press **RETURN**

5. Zoom in on your CLASS SURVEY file. It should now display text, Return "blots," and printer option carets.

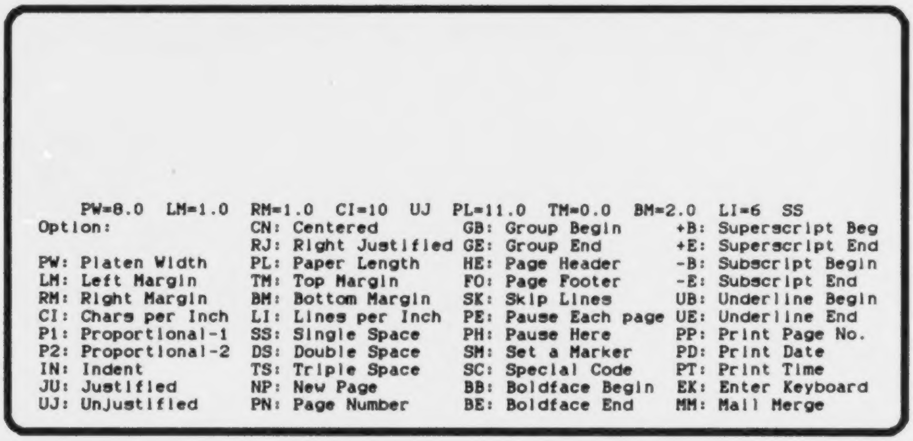


```
File: CLASS SURVEY           REVIEW/ADD/CHANGE           Escape: Main Menu
=====<==========================<=========================================
■
^CLASS SURVEY^■
■
■
LAST NAME :^                     FIRST NAME :■
■
STREET ADDRESS :■
■
CITY, STATE:■
■
PHONE (HOME) :^                  PHONE (SCHOOL) :■
■
SCHOOL :^                        DISTRICT :■
■
GRADE LEVEL :■
■
DATE :^                          TIME :■
■
MAJOR SUBJECTS YOU TEACH (OR ARE TAKING) :■
■
--------------------------------------------------------------------------
Type entry or use 9 commands            Line 1  Column  1       9-? for Help
```

## PART 2: MARGIN SETTINGS (LM, RM, TM, BM Printer Options)

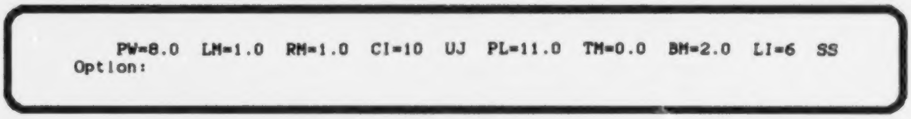
1. With the cursor at the top of the screen, press Open-Apple O (for Options).

2. A menu listing the printer options for the word processor should now be on the screen:



```
    PW=8.0  LM=1.0  RM=1.0  CI=10  UJ  PL=11.0  TM=0.0  BM=2.0  LI=6  SS
Option:             CN: Centered        GB: Group Begin      +B: Superscript Beg
                    RJ: Right Justified GE: Group End        +E: Superscript End
PW: Platen Width    PL: Paper Length    HE: Page Header      -B: Subscript Begin
LM: Left Margin     TM: Top Margin      FO: Page Footer      -E: Subscript End
RM: Right Margin    BM: Bottom Margin   SK: Skip Lines       UB: Underline Begin
CI: Chars per Inch  LI: Lines per Inch  PE: Pause Each page  UE: Underline End
P1: Proportional-1  SS: Single Space    PH: Pause Here       PP: Print Page No.
P2: Proportional-2  DS: Double Space    SM: Set a Marker     PD: Print Date
IN: Indent          TS: Triple Space    SC: Special Code     PT: Print Time
JU: Justified       NP: New Page        BB: Boldface Begin   EK: Enter Keyboard
UJ: Unjustified     PN: Page Number     BE: Boldface End     MM: Mail Merge
```

3. Note the highlighted line at the top of this menu:



```
     PW=8.0  LM=1.0  RM=1.0  CI=10  UJ  PL=11.0  TM=0.0  BM=2.0  LI=6  SS
Option:
```

1. The Platen Width ( PW ) has been set = 8.0 inches.
2. The Left Margin ( LM ) and the Right Margin ( RM ) have both been set = 1.0 inch.
3. The Characters per Inch ( CI ) has been set = 10. This represents PICA type.
4. End of each line will appear unjustified (UJ).
5. The Paper Length ( PL ) has been set = 11.0 inches.
6. The Top Margin ( TM ) = 0.0 inch. The Bottom Margin ( BM ) = 2.0 inches.
7. The number of Lines per Inch ( LI ) has been set = 6.
8. The line spacing has been set for Single Space ( SS ).

*Note the blinking cursor below the highlighted line. To change a setting, printer option codes are typed there.*

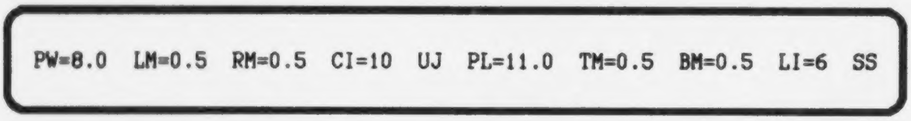
We will make four changes to set all margins for one-half inch.

4. Type: TM ............................................................ press **RETURN**
5. For inches type: .5 ............................................................ press **RETURN**

6. Type: LM ............................................................ press **RETURN**
7. For inches type: .5 ............................................................ press **RETURN**

8. Type: RM ............................................................ press **RETURN**
9. For inches type: .5 ............................................................ press **RETURN**

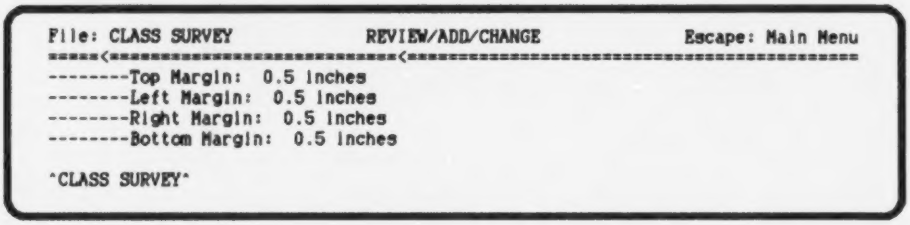
10. Type: BM ............................................................ press **RETURN**
11. For inches type: .5 ............................................................ press **RETURN**
12. Note the LM, RM, TM, and BM indicators on the highlighted line:



```
PW=8.0  LM=0.5  RM=0.5  CI=10  UJ  PL=11.0  TM=0.5  BM=0.5  LI=6  SS
```

> **NOTE**: Your screen can display a maximum of 78 characters per line. Even if you set both right and left margins to .1 (the minimum value), *AppleWorks 3.0* will wrap any word that extends into column 79.

13. Press Escape to return to the Review/Add/Change screen.
14. You can now view the printer options on the screen:



```
File: CLASS SURVEY            REVIEW/ADD/CHANGE            Escape: Main Menu
=====<============================<===========================================
--------Top Margin:  0.5 inches
--------Left Margin:  0.5 inches
--------Right Margin:  0.5 inches
--------Bottom Margin:  0.5 inches

^CLASS SURVEY^
```

15. Press Open-Apple Z to hide all options and Return blots.

## PART 3: HOW TO CENTER A TITLE (Control C)

Centering is a very common printer option. *AppleWorks 3.0* now provides control key options—similiar to underlining or printing boldface—for setting this option. Or, you could use the command codes listed on the Printer Options menu.

To learn the quick (Control key) method we will center the first CLASS SURVEY. Then you will examine the centering procedure using the Printer Option Menu. As *AppleWorks* places the printer option at the cursor location, we will begin by positioning the cursor where we want centering to begin taking effect.

1. Move the cursor to the line containing ^CLASS SURVEY^. The cursor can be any place on the line.
2. Press **Control C** (for Centering text).
   NOTE: This setting is now centering *all* text from this point on.
3. Move the cursor to the blank line *below* the title.

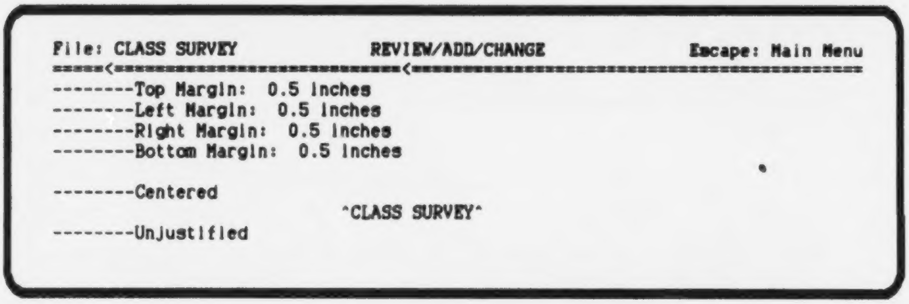
   NOTE: The cursor *must* be on the line below—not on the same line.
4. Press **Control N** (to return Normal text).
5. Aaaah, things look better now.

**NOTE**: The *AppleWorks 3.0* centering command can be "turned off" by selecting either:

| | | |
|---|---|---|
| Control N | for normal margins: | text flush left, ragged right |
| Control R | for right margins: | text flush right, ragged left, or |
| Control F | for full margins: | text flush at both margins (which won't be obvious until text is printed.) |

Try the following to examine these three Control settings.

6. With the zoom on, place the cursor on the "-------Unjustified" option.
7. Press Open-Apple D to delete this option.................................. press **RETURN**
8. With the cursor still on the line *under* CLASS SURVEY, try the **Control R** option. See the difference?
9. Now delete the "--------Right Justification" setting and try Control F. Not as obvious on screen. If printed, however, both right and left margins would be flush.
10. When done experimenting, delete "--------Justified" and reset for normal margins.
11. When done, the top of the screen should look like this:



```
File: CLASS SURVEY             REVIEW/ADD/CHANGE            Escape: Main Menu
=====<===========================<============================================
---------Top Margin:  0.5 inches
---------Left Margin:  0.5 inches
---------Right Margin:  0.5 inches
---------Bottom Margin:  0.5 inches

---------Centered
                           ^CLASS SURVEY^
---------Unjustified
```

**NOTE**: To **Delete a printer option** use the zoom command so all options can be seen; move the cursor to the line the option is on; press Open-Apple D (to Delete); and press RETURN.

## PART 4: HOW TO CENTER A TITLE (CN Printer Option)

Now let's try centering by selecting printer settings from the Printer Options Menu.

1. Move the cursor down to the line containing the second CLASS SURVEY title.
2. Press Open-apple O (for Options).
3. Type: CN (for Centered) .................................................. press **RETURN**
4. Press Escape.
5. Move the cursor to the line below CLASS SURVEY, and again press Open-Apple O.
6. Type: UJ (for Unjustified right margin) .................................. press **RETURN**
7. Press Escape.
8. The same effect has been created—using twice as many keystrokes.

## PART 5: CHANGING THE SIZE OF PRINT (CI Printer Option)

We have centered the titles. We can also change the characters per inch setting to vary the print size. We could have done this at the same time we were setting the CN option. Multiple printer options can be entered at the same cursor position.

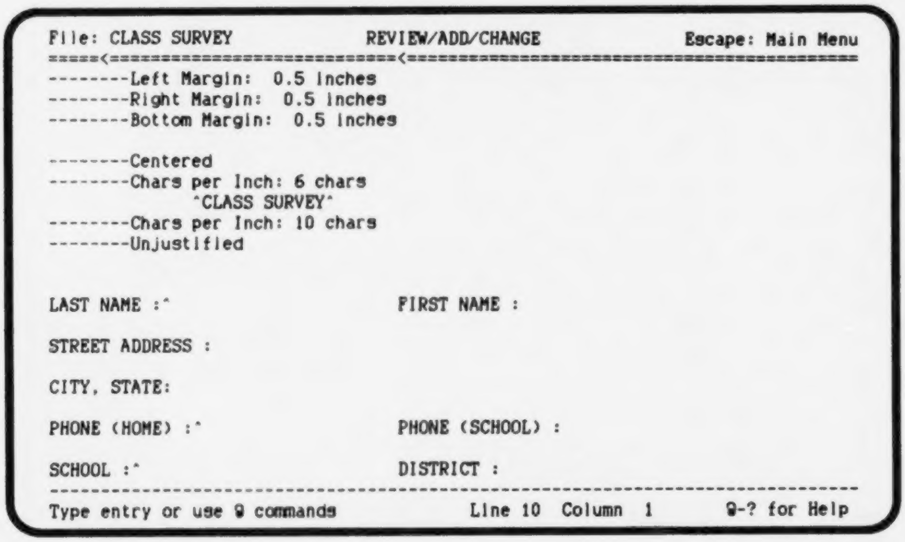
1. Move the cursor to the same line as the **first** CLASS SURVEY title.
2. Press Open-Apple O.
3. Type: CI (for Characters per Inch) ......................................... press **RETURN**
4. For characters, type: 6 ...................................................... press **RETURN**
5. Press Escape.
6. With the Zoom "on" (Open-Apple Z), the screen indicates that the title will be centered and printed at six characters per inch.

With the present setting, the title and *all* text will be printed at six characters per inch. We will set a printer option to print text at ten characters per inch.

7. Make sure the cursor is *below* the title. Placing it on the " --------Unjustified" marker is fine.
8. Press Open-Apple O.
9. Type: CI ............................................................................. press **RETURN**
10. For characters, type: 10..................................................... press **RETURN**

11. Press Escape.

12. With the Zoom "on," the screen should now look like this:



```
File: CLASS SURVEY            REVIEW/ADD/CHANGE            Escape: Main Menu
=====<===========================<==========================================
--------Left Margin:  0.5 inches
--------Right Margin:  0.5 inches
--------Bottom Margin:  0.5 inches

--------Centered
--------Chars per Inch: 6 chars
            ^CLASS SURVEY^
--------Chars per Inch: 10 chars
--------Unjustified


LAST NAME :^                      FIRST NAME :

STREET ADDRESS :

CITY, STATE:

PHONE (HOME) :^                   PHONE (SCHOOL) :

SCHOOL :^                         DISTRICT :
----------------------------------------------------------------------------
Type entry or use 9 commands           Line 10  Column  1        9-? for Help
```

**NOTE:**

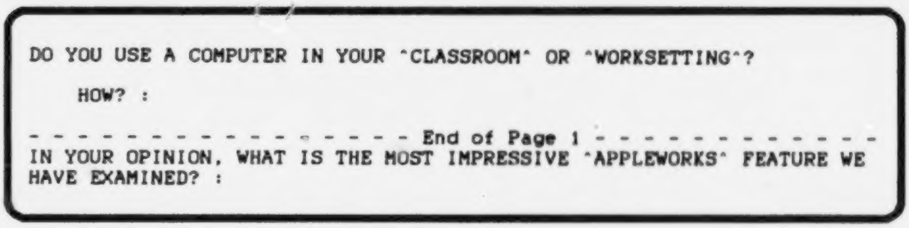
- The print size does not appear any different on the screen.
- You can enter any number from 4 to 24, depending on what your printer can manage. Standard settings for most printers are 10 or 12 CI.
- More characters per inch means narrower characters and spaces; fewer characters per inch means wider characters and spaces.

## PART 6: CALCULATING WHAT WILL BE PRINTED PER PAGE (Open-Apple K)

When ready to print you can run a "page calc" to determine the number of pages that will be printed and where each page will begin and end.

We can accept the page breaks *AppleWorks* provides. If these page breaks are not acceptable, we can use a printer command to specify where each new page is to begin.

1. The cursor can be any place in the file to run a page calc.
2. Press Open-Apple K (to "Kalculate").
3. For the question, "Which printer will be used when the file is actually printed?" select your printer from the menu............................................ press **RETURN**
4. Use the *AppleWorks* ruler to place the cursor at the beginning of the file.
5. Next move the cursor through the entire CLASS SURVEY file and note where page one will end:



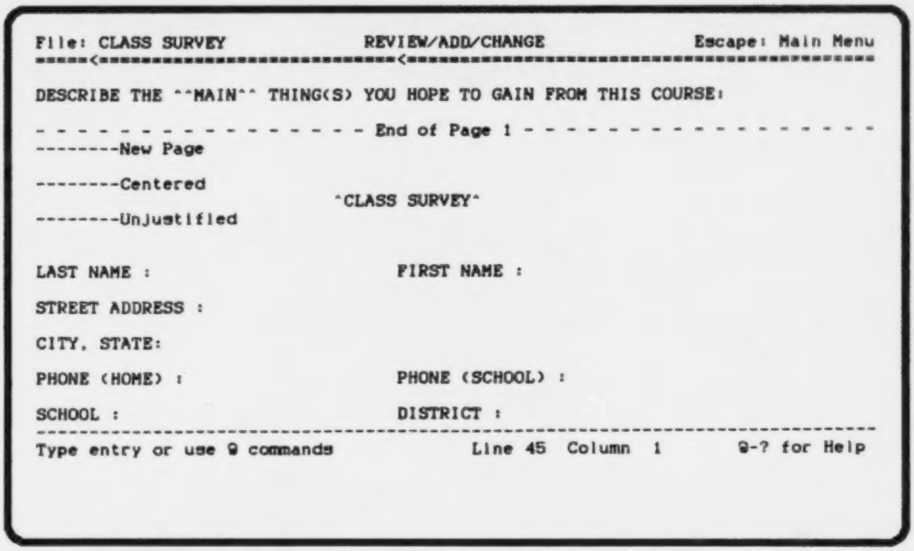
```
DO YOU USE A COMPUTER IN YOUR ^CLASSROOM^ OR ^WORKSETTING^?

    HOW? :

- - - - - - - - - - - - - - - - - - End of Page 1 - - - - - - - - - - - - -
IN YOUR OPINION, WHAT IS THE MOST IMPRESSIVE ^APPLEWORKS^ FEATURE WE
HAVE EXAMINED? :
```

**NOTE**: Typing will immediately remove End of Page messages. Since typing changes the text, and outdates the pagination, the page breaks disappear.

## PART 7: SETTING "NEW PAGE" MARKERS (Control P) (NP Printer Option)

According to the "End of Page" message, page one will contain most of the survey information and page two will be almost empty. We will set a New Page marker so each survey will be printed on a separate page. Again, with *AppleWorks 3.0* we can use either the quick Control-key method, or select the New Page code from the Printer Options menu. And again we need to move the cursor to the line where we want the new page command to take effect.

1. Move the cursor to the blank line above the **second** CLASS SURVEY centering option.
2. Press **Control P** (for Page break).
3. Note that the cursor has "jumped" to the beginning of the file.
4. With the Zoom *on*, locate the location of the "--------New Page" printer command on the screen.
5. Run the Open-Apple K page calc again. Note where the first page break will now occur:



```
File: CLASS SURVEY              REVIEW/ADD/CHANGE              Escape: Main Menu
=====<==========================<=============================================

DESCRIBE THE ^^MAIN^^ THING(S) YOU HOPE TO GAIN FROM THIS COURSE:

- - - - - - - - - - - - - - - - End of Page 1 - - - - - - - - - - - - - - - - -
--------New Page

--------Centered
                           ^CLASS SURVEY^
--------Unjustified


LAST NAME :                           FIRST NAME :

STREET ADDRESS :

CITY, STATE:

PHONE (HOME) :                        PHONE (SCHOOL) :

SCHOOL :                              DISTRICT :
--------------------------------------------------------------------------------
Type entry or use @ commands            Line 45  Column  1          @-? for Help
```

We will set a second "New Page" marker, this time using the codes from the Printer Options menu.

6. Move the cursor to the last line in the file.

7. Press Open-Apple O.

8. Type NP (for New Page)....................................................... press **RETURN**

9. Press Escape.

> **NOTE**: If you specify a new page in the *middle* of a paragraph, *AppleWorks* will put the page break *before* the paragraph.
>
> To get a new page in the middle of a paragraph, you have to break the paragraph yourself by actually inserting a Return where you want the paragraph to break. Once you have set a Return, then set the New Page option using either CONTROL P, or NP from the Printer Options Menu.

When this file is printed, each page will carry the same margin settings. Right, left, and bottom margins have not been changed since the beginning of the file.

10. However, if you want the CLASS SURVEY title on page two to look like page one, use the CI = 6 and 10 printer options.

11. Be sure to save this file.

# ACTIVITY 2
# COMPLETING A QUESTIONNAIRE

In this Activity you will fill in the survey information. Find someone to come fill out the second survey questionnaire. Please note the following points.

1. Use Open-Apple Z to hide the printer options and Return blots. We could type with the Zoom on, but the screen would appear crowded.

2. Set the Caps Lock key to the Up position. Now you will need to press the Shift key for upper case.

3. Remember: Use the Arrow keys to move the cursor around the screen—*not* the Return key.

4. For LAST NAME :

   - Place the cursor immediately to the right of the colon. As you type your last name, note that the FIRST NAME title is not moving towards the edge of the screen. Text positioned with a Tab stop will remain "set" on the assigned column and remain unaffected by inserted text. By using Tabs to set up the form, the questionnaire format remains fixed.

5. For FIRST NAME :

   - Use the Open-Apple and Right Arrow keys to move to this title. (Do not press the tab key.) Position the cursor immediately past the colon.

6. For PHONE (SCHOOL) :
   and
   for DISTRICT :

   - Use the Open-Apple and Right Arrow keys to move past these titles. Again be sure the cursor is on the space immediately to the right of the colon before typing.

7. For DATE and TIME :

   - Position the cursor immediately after the colon, following date, then from the Printer Options (Open-Apple O) menu type: PD (for Print Date). Press Return and then Escape.

   - Position the cursor immediately after the colon following TIME, then from the Printer Options menu type: PT (for Print Time). Press Return and then Escape.

   - Place the cursor on each caret on this line and note at the bottom of the screen what each caret represents, and the order in which they were positioned on the screen (e.g., the "Print Date" caret appearing before the "Tab" caret.

**NOTE**: With *AppleWorks 3.0* you can now have the date automatically printed at the Print Date caret. The date will be whatever you entered when loading *AppleWorks*. On an Apple IIGS with *AppleWorks 3.0,* you can now have the time automatically printed at the Print Time caret.

The default date setting will display the full month, day and year entry (e.g., June 30, 1990). On the Apple IIGS, the default time setting will display the AM-PM twelve hour format ( e.g., 4:15 PM).

Different time and date settings can be selected from the Main Menu, "Other Activities" and "Standard Settings" options.

8. For MAJOR SUBJECTS YOU TEACH (OR ARE TAKING) :
    - List the subjects you teach, or are taking, on one line. As you get close to the right margin you do not need to press Return. A word processor "wraps" text automatically to the next line. This built-in feature is called **word wrap**.
    - Note the word wrapping as you complete the remaining four questions.

9. Your questionnaire now contains information for one person. Use the Down Arrow key to bring the second copy of this questionnaire onto the screen.
10. Someone should now complete this form, following the instructions just outlined.
11. Do not save your work yet. Go on to Activity 3.

# ACTIVITY 3
# CREATING A TEMPLATE FILE

You have spent a fair bit of time setting up and completing this questionnaire. Sometimes it is best to have both the *original* copy and *completed* form. In this activity we will save both versions.

Let's See:

- The "BLANK" questionnaire form has been saved on your data disk.
- Your "COMPLETED" questionnaire is currently in the memory of the computer.
- You ***must save*** your work before the machine is turned off.
- If we save the CLASS SURVEY file now, the information just entered will be on the data disk.
- We can change the name of the file that is in memory—and then save it.
- That way we will finish with two forms:

  1. The completed version that you can print; and
  2. A blank form that can be stored on the data disk for future use.

- By using this process, we can use a word processor file as a template. This can be very handy for:

| | |
|---|---|
| School correspondence | (e.g., honor roll or sports recognition) |
| Reports or Records | (e.g., IEP, TITLE 1, or progress reports) |
| Lesson Plans | (e.g., instructions for a substitute teacher) |

## PART 1: CHANGING A FILE NAME (Open-Apple N)

To change the name of a file in memory, before saving:

1. Press Open-Apple N (for Name Change).
2. Note the filename displayed at the bottom of the screen.
3. Press Open-Apple Y to erase the current filename.

4. Now type a new filename, such as LINDAS.FORM.

> **NOTE**: Filenames can contain up to 15 characters, including uppercase and lowercase letters, numbers, spaces, and periods—but no punctuation, e.g., commas or apostrophes. And a filename must start with a letter.

5. Press **Return**.
   Note your *new* filename at the top of the screen.

6. Save this file on your data disk.

## PART 2: VIEWING ALL FILES ON THE DISK

1. Escape to the Main Menu.

2. Select: 5. Other Activities ............................................... press **RETURN**

3. Select: 2. List all files on the current disk drive ........................ press **RETURN**

A listing of all files on your data disk will be displayed on the screen. Both versions of CLASS SURVEY should be listed along with file size, the date and time entered, and whether it is a word processor, data base, or spreadsheet file.

4. Escape to the Main Menu.

## PART 3: PRINTING A FILE

Next we will print the completed and renamed CLASS SURVEY file. With *AppleWorks 3.0* we can determine exactly which pages we would like to print. *Even if you are not connected to a printer, complete the following steps.*

1. From the Main Menu select: 2. Work with one of the files on the Desktop.

2. The survey file containing your responses will again appear on screen.

3. Press Open-Apple P (to Print).

4. For "Print from?" select: Page to page .................................. press **RETURN**

5. Select the printer you will be using........................................ press **RETURN**

6. To enter the beginning page number, type: 1............................ press **RETURN**

7. To enter the ending page number, type: 2 ................................ press **RETURN**

8. To print one copy .............................................................. press **RETURN**

9. When done, the Review/Add/Change will return to the screen.

10. If required, turn in this two-page printout to your instructor.

# ACTIVITY 4

# TRANSFERRING TEXT BETWEEN WORD PROCESSOR FILES

In this next activity you will create a word processor file and type answers to several riddles. Next you will load a word processor file containing the questions. To pair up questions and answers, you will use the *AppleWorks* copy and move commands and the Clipboard. *AppleWorks* refers to this process as its "cut and paste" feature.

Our examples will be short and silly. However, the concept is called "Boilermaking": creating documents by transferring sections of text (e.g., sentences, paragraphs, or pages, etc.) from one file to another. And since *AppleWorks* is an integrated program, this transfer process is always available—once you understand how to use the Clipboard.

## PART 1: CREATING A WORD PROCESSOR FILE FROM SCRATCH

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop .......................................... press **RETURN**
3. Select: 3. Make a new file: Word Processor .............................. press **RETURN**
4. Select: 1. From scratch ...................................................... press **RETURN**
5. For file name, type: ANSWER FILE ....................................... press **RETURN**
6. Type the following list of riddle answers. Leave two blank lines between each answer.

   A: A watchdog.

   A: A bulldozer.

   A: Neither—they both burn shorter.

   A: Because the horns didn't work.

   A: A bee flying backwards.

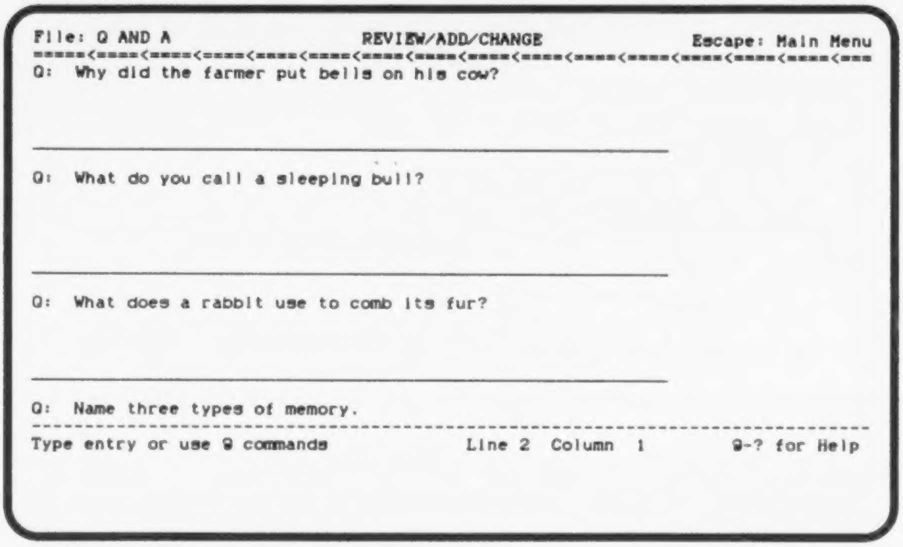
   A: A hare brush.

   A: A lawn mooer.

   A: Good, bad, and convenient.

## PART 2: ADDING A WORD PROCESSOR FILE TO THE DESKTOP

1. Escape to the Main Menu.
2. Select: 1. Add files to the Desktop .......................................... press **RETURN**
3. Select: 1. Get files from current disk ...................................... press **RETURN**
4. Select: --> Q AND A ........................................................ press **RETURN**
5. A word processor file containing riddle questions should now be on the screen.



```
File: Q AND A                  REVIEW/ADD/CHANGE                Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Q:  Why did the farmer put bells on his cow?


______________________________________________________________

Q:  What do you call a sleeping bull?


______________________________________________________________

Q:  What does a rabbit use to comb its fur?


______________________________________________________________

Q:  Name three types of memory.
--------------------------------------------------------------------------------
Type entry or use @ commands            Line 2  Column  1          @-? for Help
```

## PART 3: COPYING TEXT TO THE CLIPBOARD

Now we will combine the questions and answers. The process will involve first copying text to the Clipboard (cutting), then moving it from the Clipboard (pasting) into another word processor file.

We will begin by finding the answer for "Why did the farmer put bells on his cow?"

1. Press Open-Apple Q (to Quickly Switch to another file).
   A Desktop Index listing the files in memory will appear on the screen.
2. Select: ANSWER FILE ...................................................... press **RETURN**
3. Use an arrow key to move the cursor to: A: Because the horns didn't work.
4. Press Open-Apple C (to Copy).

5. Select: To clipboard ........................................................ press **RETURN**
6. Use the arrow key to highlight the entire answer. Include the Return blot at the end of the sentence.
7. Press Return.
8. Note that the Review/Add/Change screen looks the same, but a copy of the answer is now on the Clipboard.

## PART 4: COPYING AND MOVING TEXT FROM THE CLIPBOARD (Open-Apple M)

1. Press Open-Apple Q to again view the Desktop Index.
2. Select: Q AND A ........................................................ press **RETURN**
3. With the Zoom on, move the cursor to the second **RETURN** under the farmer question.
4. Press Open-Apple M (to move).
5. Select: From clipboard ........................................................ press **RETURN**

The answer has been moved off the Clipboard. There are now two (2) "Because the horns didn't work" answers, one in each word processor file. Next we will repeat this process with a slight variation.

6. Switch to the ANSWER file.
7. Make a copy of A: A bulldozer to the Clipboard.
8. Again switch to the Q AND A file.
9. Move the cursor to the *second* Return under: Q: What do you call a sleeping bull?
10. This time press Open-Apple C (to Copy).
11. Select: From Clipboard ........................................................ press **RETURN**
    The answer should now be on the screen.

You now have three (3) copies of "bulldozer," one in each file *and* one still on the Clipboard (you didn't move it, but copied it).

12. To check: Move the cursor down one line and copy a second "bulldozer" from the Clipboard into this file.

**NOTE**: Information transferred to the Clipboard, and then ***copied*** into another file, will remain in memory until it is either moved off or ***something else is copied to the clipboard***. Note that the Clipboard can hold only one copy at a time.

## PART 5: MOVING TEXT TO THE CLIPBOARD (Open-Apple M)

Now for a third variation.

1. Switch to the ANSWER file to find the rabbit answer.
2. Position the cursor at the beginning of the correct answer and press Open-Apple M (to move).
3. Select: To clipboard ........................................................ press **RETURN**
4. Highlight the answer and the Return blot.................................. press **RETURN**

**NOTE:** Our hare brush answer is no longer in the ANSWER file. Hopefully it is on the Clipboard . . . this would not be the best time for a power failure.

5. Switch to the other file and move "hare brush" into this file.

**NOTE**: There is now one, and only one, hare brush anywhere on the Desktop: The Answer file no longer contains a hare brush and neither does the Clipboard. For important information this last procedure can be a little risky. Copying information to and from the Clipboard is definitely a safer approach. If you retain a copy in your original file you can repeat the process.

7. Now you are on your own. Pair up the remaining questions and answers.
8. After the last set, add your favorite riddle.
9. Save your work.
10. If required, turn in this printout to your instructor.

**NOTE**: With *AppleWorks* you can move information from one document to another using the Clipboard. The Clipboard is an area that *AppleWorks* reserves in the memory of the computer to store text you move or copy from one document, while you move to the place in the other document where you want to put it.

Remember, when we *move* information from the Clipboard we actually remove it from memory. We can *copy* information *from* the Clipboard over and over, and the information remains on the Clipboard until we:

- *copy* or *move* new information to the clipboard,
- *move* information from the clipboard, or
- *quit AppleWorks*.

# ACTIVITY 5
# MORE PRINTER OPTIONS

We set some of the most common printer options when formatting the CLASS SURVEY file. In this activity we will examine other printer options. The word processor file is a school newsletter from our imaginary Steelhead School in Slowriver, Oregon. The news articles have already been entered. Last minute layout tasks will include:

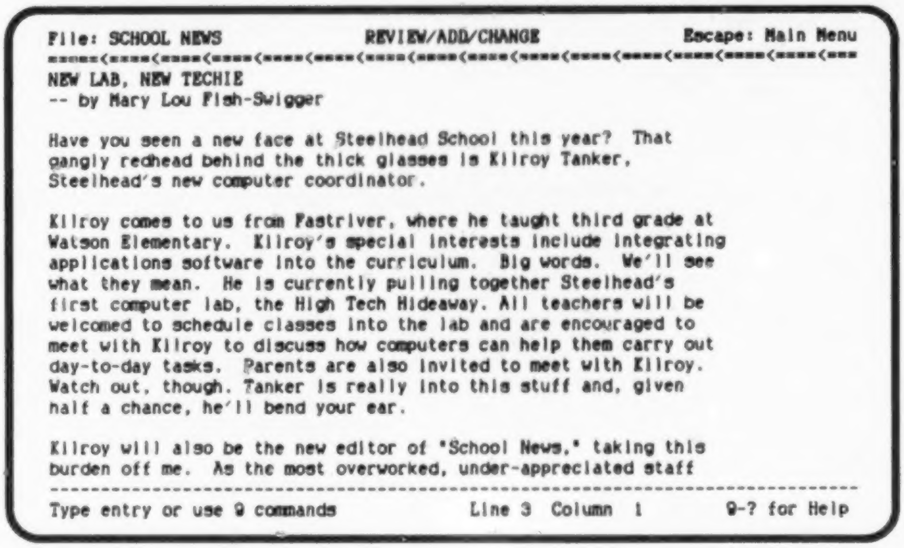
- Setting Tab markers;
- Setting the command for printing page numbers;
- Adjusting the top margin for the school letterhead;
- Adjusting margins so pictures can be pasted beside articles;
- Adding the School Calendar listing upcoming events; and
- Running a final page calc and setting necessary New Page markers.

## PART 1: ADDING FILES TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop ........................................ press **RETURN**
3. Select: 1. From the Current Disk ........................................ press **RETURN**
4. Select: --> SCHOOL CALENDAR
   --> SCHOOL NEWS
5. Press Return.

The files you have added are listed on the screen under Desktop Index.

6. Select SCHOOL NEWS ..................................................... press **RETURN**
7. The October 1991 school newsletter for Steelhead School should now be on the screen:



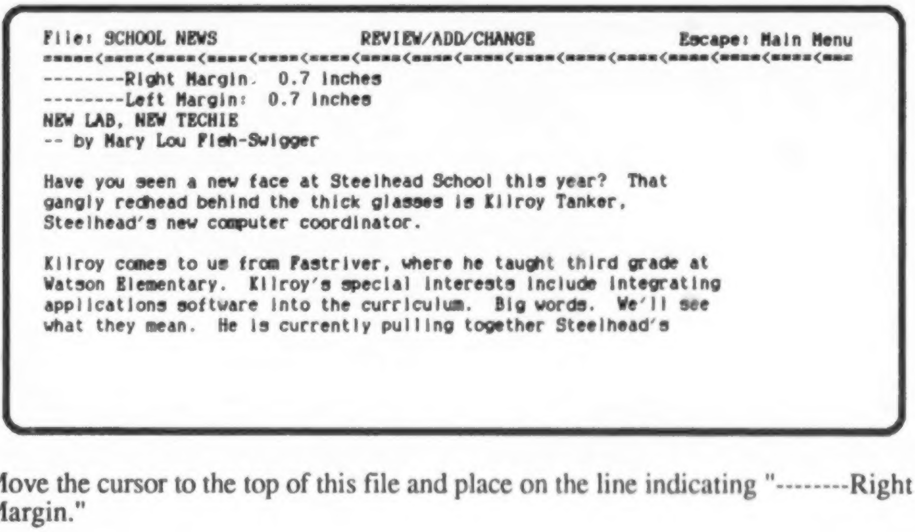
```
File: SCHOOL NEWS               REVIEW/ADD/CHANGE             Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
NEW LAB, NEW TECHIE
-- by Mary Lou Fish-Swigger

Have you seen a new face at Steelhead School this year?  That
gangly redhead behind the thick glasses is Kilroy Tanker,
Steelhead's new computer coordinator.

Kilroy comes to us from Fastriver, where he taught third grade at
Watson Elementary.  Kilroy's special interests include integrating
applications software into the curriculum.  Big words.  We'll see
what they mean.  He is currently pulling together Steelhead's
first computer lab, the High Tech Hideaway. All teachers will be
welcomed to schedule classes into the lab and are encouraged to
meet with Kilroy to discuss how computers can help them carry out
day-to-day tasks.  Parents are also invited to meet with Kilroy.
Watch out, though. Tanker is really into this stuff and, given
half a chance, he'll bend your ear.

Kilroy will also be the new editor of "School News," taking this
burden off me.  As the most overworked, under-appreciated staff
--------------------------------------------------------------------------
Type entry or use @ commands            Line 3  Column  1        @-? for Help
```

This newsletter has not been checked for spelling or typing errors. It is becoming common practice to use a spelling checker program before printing important documents. In Chapter 3 we will use the *AppleWorks* 3.0 built-in spelling checker to edit several documents, including this newsletter. But first we will set the printer options.

## PART 2: MARGIN SETTINGS (LM, RM Printer Options)

1. Press Open-Apple Z.

2. The top of your screen will indicate that both **right** and **left** margins have been set to 0.7 inches.

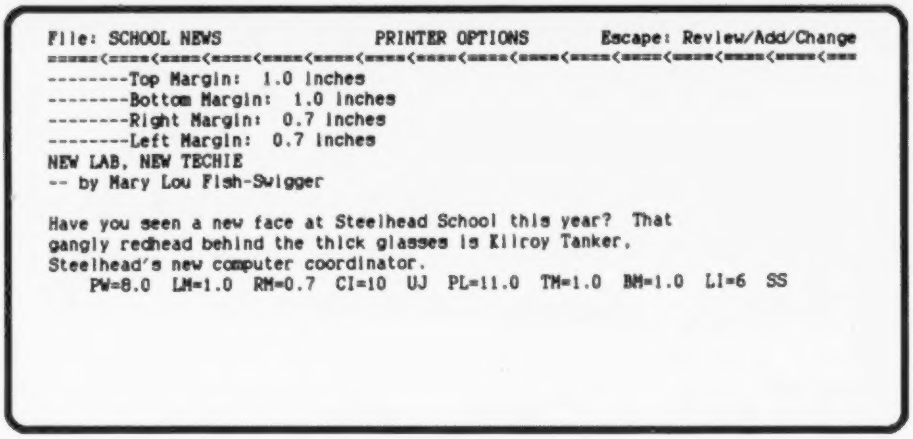


```
File: SCHOOL NEWS               REVIEW/ADD/CHANGE             Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
NEW LAB, NEW TECHIE
-- by Mary Lou Fish-Swigger

Have you seen a new face at Steelhead School this year?  That
gangly redhead behind the thick glasses is Kilroy Tanker,
Steelhead's new computer coordinator.

Kilroy comes to us from Fastriver, where he taught third grade at
Watson Elementary.  Kilroy's special interests include integrating
applications software into the curriculum.  Big words.  We'll see
what they mean.  He is currently pulling together Steelhead's
```

3. Move the cursor to the top of this file and place on the line indicating "--------Right Margin."

4. With the cursor at the top of the file, press Open-Apple O and set both **top** and **bottom** margin to 1 inch.

5. Check both the highlighted line at the top of the option menu to note the new TM and BM settings, and the on-screen markers:



```
File: SCHOOL NEWS               PRINTER OPTIONS       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
--------Top Margin:  1.0 inches
--------Bottom Margin:  1.0 inches
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
NEW LAB, NEW TECHIE
-- by Mary Lou Fish-Swigger

Have you seen a new face at Steelhead School this year?  That
gangly redhead behind the thick glasses is Kilroy Tanker,
Steelhead's new computer coordinator.
    PW=8.0  LM=1.0  RM=0.7  CI=10  UJ  PL=11.0  TM=1.0  BM=1.0  LI=6  SS
```

6. Press Escape. We are through with the options menu.

## PART 3: MODIFYING A TAB RULER (Open-Apple T)

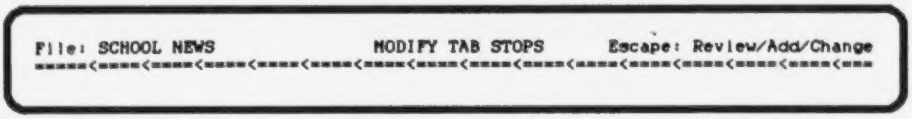
Next we need to set several Tab Stops to align text. We will set the **Left Tab** for spacing the School Calendar, use the **Right Tab** to justify the right margins for two article headings, and set the **Decimal Tab** so all school store prices line up by decimal points.

First, we will set left tabs in our SCHOOL NEWS file that will affect the School Calendar layout. In Part 10 we will add several calendar events. Tab markers can ensure that all new entries line up:

| | column 14 | column 24 |
|---|---|---|
| October 18 | (M) | Teacher Workday - NO SCHOOL |
| October ?? | (?) | (new entry) |
| October 27 | (W) | Grandparents Day<br>Visitation 8:30-2:30 |

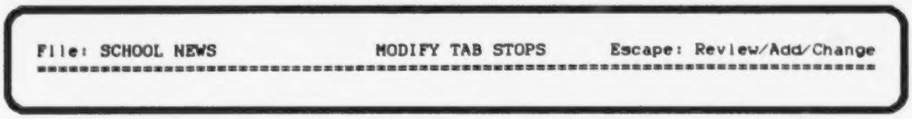
Since the calendar will appear at the beginning of the newsletter we can use the *current* Tab Ruler and make some simple "modifications."

1. With the zoom on, move the cursor to the top of the file. (Line 1)
2. Press Open-Apple T (for Tabs).
3. Select: Modify current.
4. Note the "less than" markers at the top of the screen showing the default Tab markers:



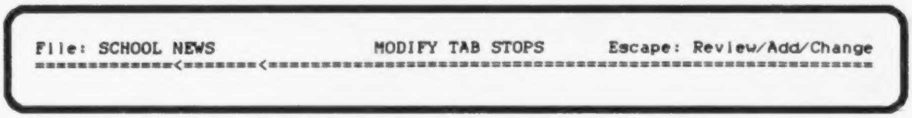
```
File: SCHOOL NEWS               MODIFY TAB STOPS      Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
```

5. To remove all default Tab markers, type: N (for No tabs).
   The entire Tab Ruler should now be clear:



```
File: SCHOOL NEWS               MODIFY TAB STOPS      Escape: Review/Add/Change
================================================================================
```

6. Set Left Tab markers for columns 14 and 22.



```
File: SCHOOL NEWS               MODIFY TAB STOPS      Escape: Review/Add/Change
=============<=======<==========================================================
```

7. Press Escape. We are through setting Tabs that will affect the School Calendar layout.

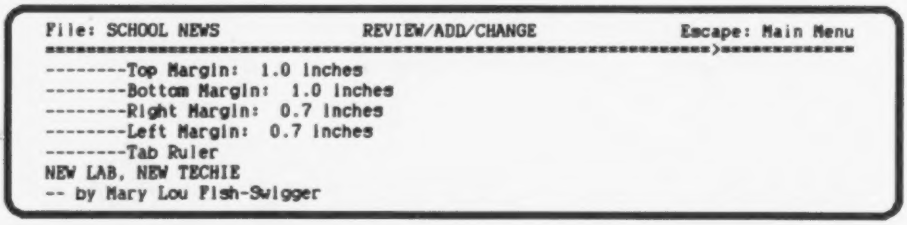
## PART 4: CREATING ADDITIONAL TAB RULERS (Open-Apple T)

Next we will position the cursor elsewhere in the newsletter and create new rulers for two article headings.

1. Move the cursor to the line "NEW LAB, NEW TECHIE." (Line 5)
2. Press Open-Apple T (for Tabs).
3. This time select: Create new.

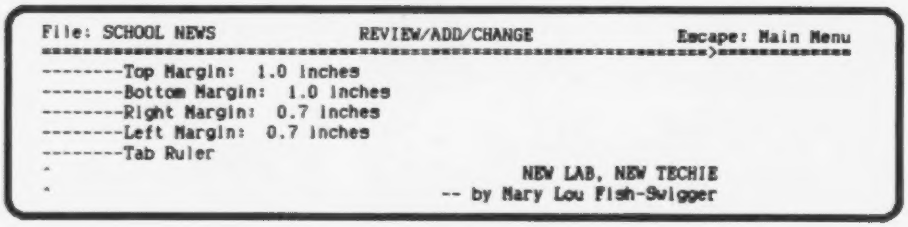
**NOTE**: With the cursor back at the top of the screen *AppleWorks 3.0* now allows us to set different tabs, ones that will take effect from the cursor position to the end of the document—or to the next Tab Ruler.

4. Type: N (for No tabs).
5. Set a **Right Tab** marker at column 66, the last column in this newsletter.
6. Press Escape.
7. Note the "--------Tab Ruler" printer option on the screen indicating where new Tab settings will begin.



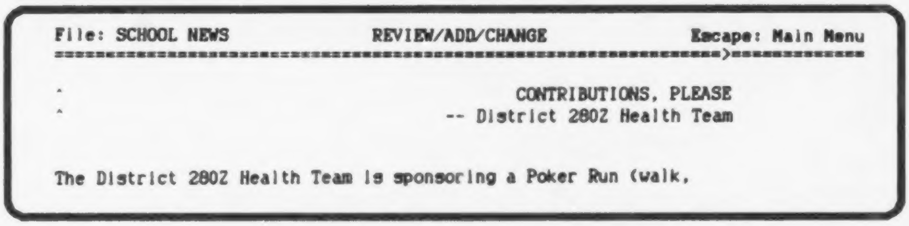
```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE              Escape: Main Menu
==================================================================>============
--------Top Margin:  1.0 inches
--------Bottom Margin:  1.0 inches
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
--------Tab Ruler
NEW LAB, NEW TECHIE
-- by Mary Lou Fish-Swigger
```

8. Now position the cursor so it's on the first letter of "NEW LAB, NEW TECHIE." Use the Tab Key to position it at the Right Tab.
9. Use the Tab key to position "—by Mary Lou Fish-Swigger" at this tab. Note how text aligns flush right:



```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE              Escape: Main Menu
==================================================================>============
--------Top Margin:  1.0 inches
--------Bottom Margin:  1.0 inches
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
--------Tab Ruler
^                                              NEW LAB, NEW TECHIE
^                                      -- by Mary Lou Fish-Swigger
```

10. Move the cursor to the article heading "CONTRIBUTIONS, PLEASE."
11. Use the Tab key to align both lines of the article heading at the Right Tab.



```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE               Escape: Main Menu
=================================================================>==============
^                                            CONTRIBUTIONS, PLEASE
^                                     -- District 2802 Health Team

The District 2802 Health Team is sponsoring a Poker Run (walk,
```

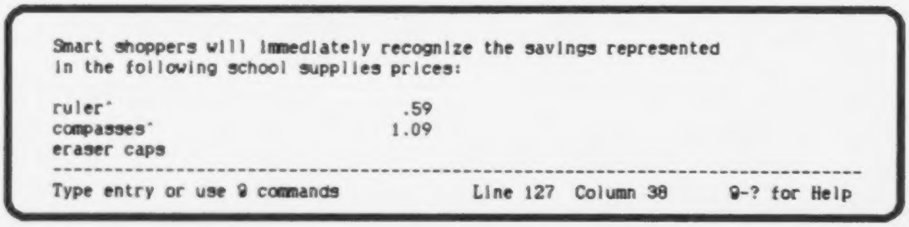
**NOTE:**

- At any time you can create an additional ruler in a document. The new ruler begins to take effect with the paragraph your cursor is in, and remains in effect to the end of the document—or until you create another ruler below it.
- You may have as many different rulers in a document as you wish, with ruler markers changing as the cursor moves through the document.

12. Now move the cursor to the beginning of the article, "SCHOOL STORE HAS SUPER SAVINGS!"
13. Create another new Tab Ruler, and remove the existing Right Tab.
14. Now set a **Decimal Tab** at column 35, and press Escape.

Eight school supply items have been entered.

15. Position the cursor after the "ruler" entry, use the Tab key to move to column 35, and enter .59.
16. Position the cursor after "compasses," use the Tab key to move to column 35, and enter 1.09.
17. Note the decimal points.



```
Smart shoppers will immediately recognize the savings represented
in the following school supplies prices:

ruler^                            .59
compasses^                       1.09
eraser caps
--------------------------------------------------------------------------------
Type entry or use 9 commands              Line 127  Column 38     9-? for Help
```

18. Enter the following prices for each supply item: eraser caps (.49), protractors (.59), zipper pouches (.79), 3-ring notebooks (3.97), pee-chee folders (.49), and clamp notebooks (2.25).

19. Enter the following prices for each clothing item: T shirts - short sleeve (3.50), T shirts - long sleeve (5.00), sweatshirts (6.00), hats (2.00), and shoe strings (.50).

## PART 5: PRINTING PAGE NUMBERS (PP, FO, HE, Printer Options)

With *AppleWorks* you can include a page number in your regular text, or at the top (within a header) or bottom (as a footer) for each page. Then when preparing to print, *AppleWorks* calculates pages and assigns and prints page numbers accordingly.

For the SCHOOL NEWS file we will include a page number at the bottom of *each* page. We will begin by positioning the cursor at the top of the file—below the margin settings. That way the following printer settings will be inserted **below** margin settings and **above** the ruler marker.

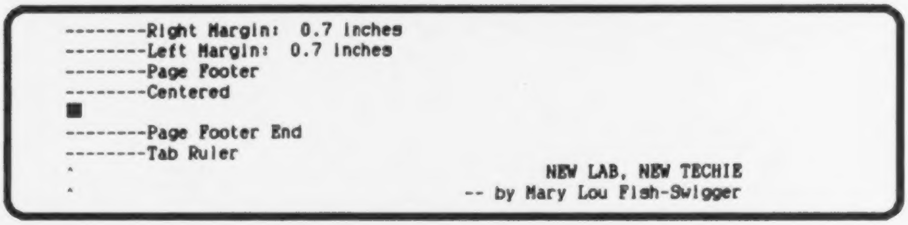
1. Position the cursor on the "-------Tab Ruler" marker at the top of this file.
2. Press Open-Apple O.
3. Type: FO (for Page Footer) .................................................. press **RETURN**

**NOTE:**

- If you want the page number to appear at the *bottom* of every page, use the FO (Page Footer) printer option.
- If you want the page number to appear at the *top* of each page, use the HE (Page Header) printer option.
- If you want a header or footer to begin appearing on the *second page*, place the FO or HE printer option after the first page break.
- *To turn off* a header or footer (e.g., if you don't want page numbers to appear in a bibliography), press open-apple O, type HE or FO, and instead of entering any text, create an empty line by pressing Return.
- If we want each page number to be centered on the line, include a centering setting.

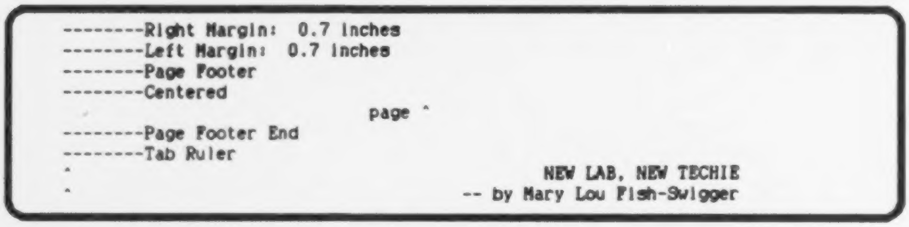
4. Type: CN ................................................................. press **RETURN**
5. Press Escape. We need to return to the Review/Add/Change screen to do some typing.

6. Leave the cursor on the blank line that has been created at the top of the screen, between the **Page Footer / Centered** and **Page Footer End** markers.



```
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
--------Page Footer
--------Centered
■
--------Page Footer End
--------Tab Ruler
^                                          NEW LAB, NEW TECHIE
^                                   -- by Mary Lou Fish-Swigger
```

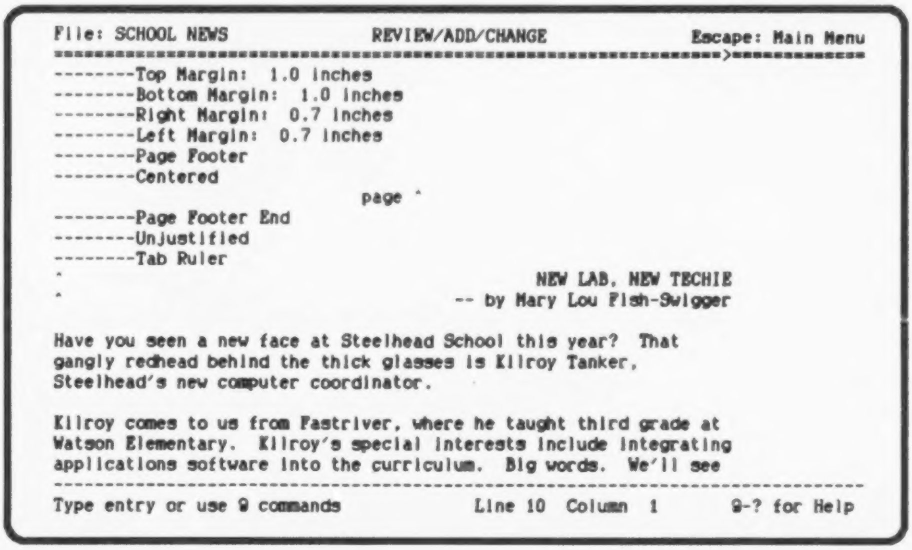
7. Type: page.
8. Tap: one space with the Space Bar.
9. Again, press Open-Apple O. We need one more printer option, the command indicating where each sequential page number is to appear.
10. Type: PP (for Print Page numbers)........................................ press **RETURN**
11. Press Escape.
12. Place the cursor on the caret ( ^ ) after the word "page."
Note what is indicated at the bottom of the screen.
13. Note what is indicated on the line below "page ^"
*AppleWorks* automatically enters the beginning and ending printer options for footers.



```
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
--------Page Footer
--------Centered
                          page ^
--------Page Footer End
--------Tab Ruler
^                                          NEW LAB, NEW TECHIE
^                                   -- by Mary Lou Fish-Swigger
```

14. What a nuisance! The CN command is centering the entire newsletter. Place the cursor on the line indicating "--------Tab Ruler."
15. Press Control N to return text to the (normal) left margin.

16. The top of your screen should now indicate:



```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE               Escape: Main Menu
==================================================================>=============
--------Top Margin:  1.0 inches
--------Bottom Margin:  1.0 inches
--------Right Margin:  0.7 inches
--------Left Margin:  0.7 inches
--------Page Footer
--------Centered
                              page ^
--------Page Footer End
--------Unjustified
--------Tab Ruler
^                                               NEW LAB, NEW TECHIE
^                                       -- by Mary Lou Fish-Swigger

Have you seen a new face at Steelhead School this year?  That
gangly redhead behind the thick glasses is Kilroy Tanker,
Steelhead's new computer coordinator.

Kilroy comes to us from Fastriver, where he taught third grade at
Watson Elementary.  Kilroy's special interests include integrating
applications software into the curriculum.  Big words.  We'll see
--------------------------------------------------------------------------------
Type entry or use 9 commands             Line 10  Column  1        9-? for Help
```

**NOTE**: *AppleWorks* determines the page count. It increments and prints the correct page number on each page. Since you placed the PP marker on the first page, this is where the page numbering will first appear. In Part 14 you will learn how to change the page number *AppleWorks* would ordinarily assign to a page.

Like a margin setting, the page numbering command affects all text (pages) following the marker.

To summarize, including an incremental page number on *each* page requires the following steps:

- Placing the cursor on the first page in which you want a page number to appear.
- While on the Printer Options menu:
  a) setting a page Footer (FO) or Header (HE) marker;
  b) setting a Print Page number (PP) marker between the footer (or header) screen markers; and
  c) setting additional options (e.g., centering marker or CI setting), if desired.
- Returning to the Review/Add/Change screen and entering any appropriate text (e.g., "page "), *between* the page footer or header markers.

## PART 6: SKIPPING LINES (SK Printer Option)

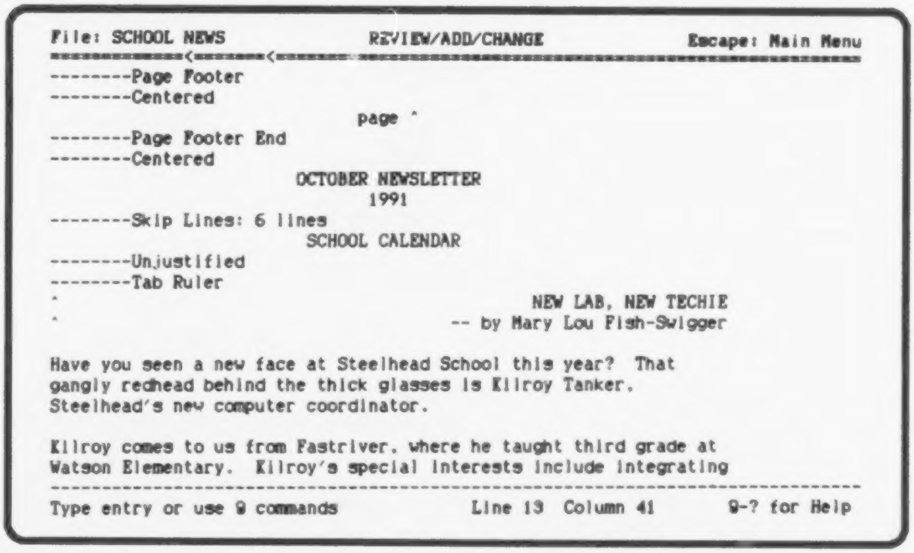
Next we will set up the spacing and centered titles for the newsletter heading. This newsletter uses a school logo picture at the top of the first page. We will use a printer option to skip the necessary lines between the titles OCTOBER NEWSLETTER and SCHOOL CALENDAR where this logo would appear.

1. Place the cursor on the line indicating "--------Unjustified."
2. Press Return to create a blank line above this printer option.
3. Move the cursor to this blank line.
4. Set the Centering command.
5. Type: OCTOBER NEWSLETTER.
6. Press Return.
7. Type: 1991 ........................................................................ press **RETURN**
8. There needs to be a one-inch blank space for the school logo.
9. Press Open-Apple O.
10. Type: SK (for Skip Lines) ........................................................ press **RETURN**
11. For lines, type: 6 ................................................................ press **RETURN**

> Note the LI setting on the highlighted line of the Options menu. The default Lines per Inch setting is 6. With our "skip lines" setting, the printer will now skip six lines, which equals one inch, before printing further text. (Some printers provide 8 lines per inch—which could be set by using the LI option.)

**NOTE**: When *AppleWorks* calculates the page breaks, skipped lines are taken into account so page breaks will be accurate.

12. Press Escape.
13. With the cursor on the blank line, type: SCHOOL CALENDAR.
14. Your screen should look like this:



```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE              Escape: Main Menu
=============<=======<=======================================================
--------Page Footer
--------Centered
                              page ^
--------Page Footer End
--------Centered
                        OCTOBER NEWSLETTER
                               1991
--------Skip Lines: 6 lines
                         SCHOOL CALENDAR
--------Unjustified
--------Tab Ruler
^                                              NEW LAB, NEW TECHIE
^                                      -- by Mary Lou Fish-Swigger

Have you seen a new face at Steelhead School this year?  That
gangly redhead behind the thick glasses is Kilroy Tanker.
Steelhead's new computer coordinator.

Kilroy comes to us from Fastriver. where he taught third grade at
Watson Elementary.  Kilroy's special interests include integrating
--------------------------------------------------------------------------------
Type entry or use 9 commands            Line 13  Column 41        9-? for Help
```

## PART 7: ADJUSTING MARGIN SETTINGS FOR ILLUSTRATIONS (LM, RM Printer Options)

The school newsletter is advertising a bake sale. A cartoon will be placed beside this article, so the margins need to be adjusted.

1. Move the cursor to the first character of BAIT & BAKE SALES.

2. Press Open-Apple O.

3. For option type: LM ........................................................ press **RETURN**
   We will increase this margin to allow space for the cartoon.

4. For inches type: 2.2 ........................................................ press **RETURN**
   The current left margin of .7 inch, plus the cartoon width, 1.5 inches.

5. Press Escape.
   Note the text adjusting to this new margin setting.

6. With the Zoom "on" you can read the new left margin setting.
   Note the text above this setting is still determined by the LM and RM settings at the top of the file.

7. Move the cursor to the blank space below the bake sale article. Reset the left margin to .7 inch.

8. Press Escape to return to the Review/Add/Change screen.

There will be a picture to go along with the article, "New Lab, New Techie," introducing the new computer coordinator.

9. Move the cursor up to the beginning of the line, "Kilroy will also be the new editor . . . . "

10. Set the right margin to 3.0 inches.
    This picture is 2.3 inches wide.

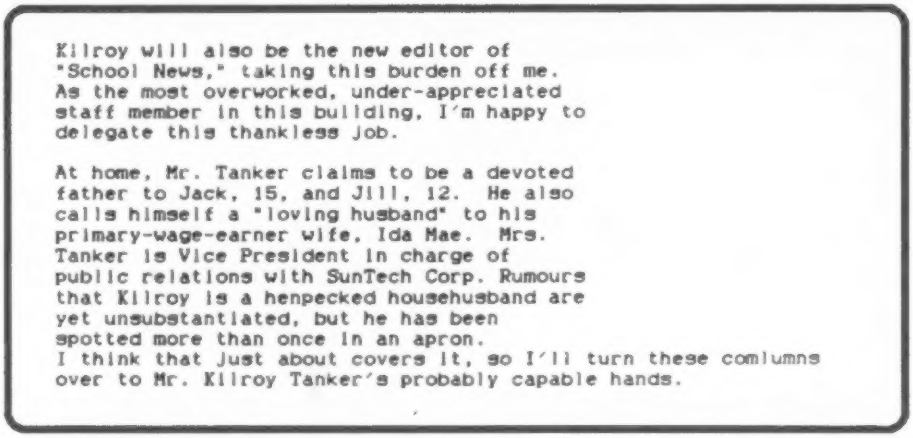
11. Move the cursor down to the beginning of the line, "I think that just about . . . ."

12. Reset the right margin to .7 inch.

13. Move the cursor through these articles. Note how the text adjusts to the most recent margin settings.

## PART 8: JUSTIFYING RIGHT MARGINS (JU Printer Option)

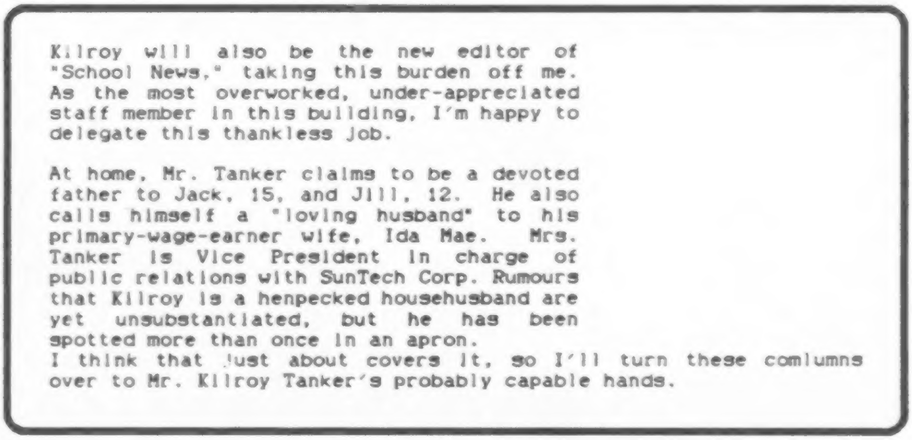
If we were to print this newsletter right now, all right margins would appear "ragged." Part of the NEW LAB, NEW TECHIE article would appear:



```
Kilroy will also be the new editor of
"School News," taking this burden off me.
As the most overworked, under-appreciated
staff member in this building, I'm happy to
delegate this thankless job.

At home, Mr. Tanker claims to be a devoted
father to Jack, 15, and Jill, 12.  He also
calls himself a "loving husband" to his
primary-wage-earner wife, Ida Mae.  Mrs.
Tanker is Vice President in charge of
public relations with SunTech Corp. Rumours
that Kilroy is a henpecked househusband are
yet unsubstantiated, but he has been
spotted more than once in an apron.
I think that just about covers it, so I'll turn these comlumns
over to Mr. Kilroy Tanker's probably capable hands.
```

*AppleWorks 3.0* provides a printer option allowing both left and right margins to print flush.

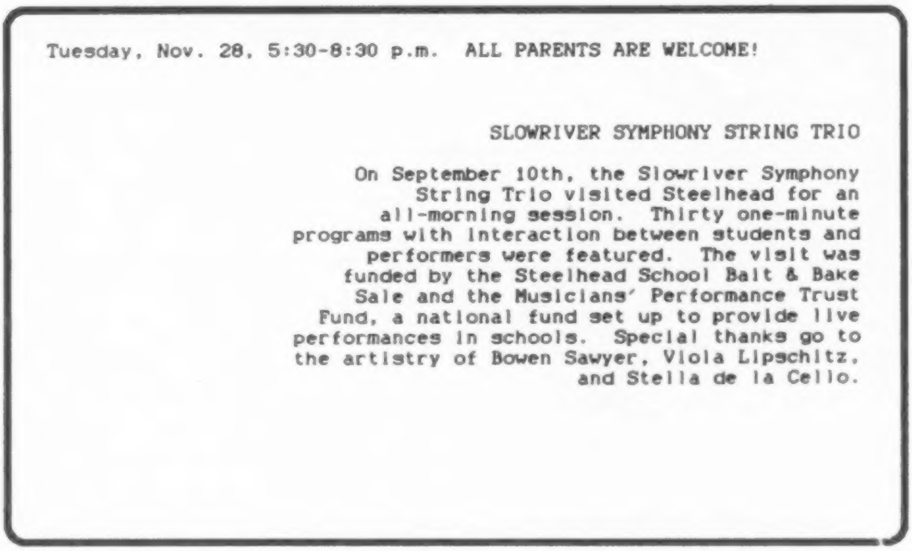
1. Move the cursor to the first character of "Kilroy will also be the new editor . . . ."
2. Press Control F (for Full Justification).
3. Note that full margin justification *does not* appear on screen. When printed, however, this section will appear:



```
Kilroy  will  also  be  the  new  editor  of
"School News,"  taking this burden off me.
As  the  most  overworked,  under-appreciated
staff member in this building, I'm happy to
delegate this thankless job.

At home, Mr. Tanker claims to be a devoted
father to Jack, 15, and Jill, 12.  He also
calls  himself  a  "loving  husband"  to  his
primary-wage-earner  wife,  Ida  Mae.   Mrs.
Tanker   is   Vice   President   in   charge   of
public relations with SunTech Corp. Rumours
that Kilroy is a henpecked househusband are
yet   unsubstantiated,   but   he   has   been
spotted more than once in an apron.
I think that just about covers it, so I'll turn these comlumns
over to Mr. Kilroy Tanker's probably capable hands.
```

4. Move the cursor to the beginning of the sentence "I think that just about . . . ."
5. Press Control N (for Normal justification).
6. Now right justify (Control R) the margins for the entire SLOWRIVER SYMPHONY STRING TRIO article.

7. Increase the left margin to accommodate a 2.0 inches wide picture.
8. At the end of this article return the **left margin** setting to .7 inch with no further right justification.
9. When printed this section will appear:



```
Tuesday, Nov. 28, 5:30-8:30 p.m.  ALL PARENTS ARE WELCOME!



                                    SLOWRIVER SYMPHONY STRING TRIO

                        On September 10th, the Slowriver Symphony
                              String Trio visited Steelhead for an
                           all-morning session.  Thirty one-minute
                    programs with interaction between students and
                          performers were featured.  The visit was
                        funded by the Steelhead School Bait & Bake
                         Sale and the Musicians' Performance Trust
                      Fund, a national fund set up to provide live
                    performances in schools.  Special thanks go to
                    the artistry of Bowen Sawyer, Viola Lipschitz,
                                           and Stella de la Cello.
```

## PART 9: COPYING TEXT BETWEEN WORD PROCESSOR FILES (Open-Apple C)

All the articles have been word processed, the margins have been adjusted to accommodate illustrations, and the spacing for the heading has been set.

The school calendar still needs to be added to the newsletter. The official district calendar was word processed at the beginning of the school year and now serves as a template. As building events are scheduled, they are added to the SCHOOL CALENDAR file, and used for various building communications. We now need to transfer a copy of the fall events in this calendar to the SCHOOL NEWS file.

1. When in the SCHOOL NEWS file have the Zoom *on* and move the cursor to the Tab ruler under "SCHOOL CALENDAR." Press Return once to create a blank line, and move the cursor to the blank line.

We are about to move a copy of the SCHOOL CALENDAR to this line.

- How would the text appear if we moved the calendar *above* the "Unjustified" marker?
- What tabs would be in effect if we move the calendar *below* the "Tab Ruler" marker?

2. Press Open-Apple Q (for Quick file).
3. Highlight: SCHOOL CALENDAR.
4. Press Return.
   You are now in another word processor file.
5. Move the cursor to the first character of "October 18."
6. Press Open-Apple C (for Copy).
7. Select: To Clipboard........................................................... press **RETURN**
8. Use the Down Arrow key, or Open-Apple 9, to highlight all text, through:
   "January 2	Winter Vacation - NO SCHOOL."
9. Press Return. A copy should now be on the Clipboard.
10. Press Open-Apple Q.
11. Highlight: SCHOOL NEWS ................................................ press **RETURN**
    The cursor should still be on the blank line.
12. Press Open-Apple M.
13. Select: From Clipboard (paste)............................................ press **RETURN**
    A copy of the School Calendar should now be in your SCHOOL NEWS file.
14. Add two Returns for more spacing. Zoom out and examine the newsletter.

## PART 10: ENTERING TEXT

Three upcoming events still need to be included in the calendar.

1. Insert the following activities into the SCHOOL CALENDAR section of the newsletter.
   - Use the Return key to get the spacing shown below.
   - Use the Tab key for column spacing:

| | | |
|---|---|---|
| October 22 | (F) | Grade 4-5 Regional Soccer Meet<br>Grade 4—9 am - 11:15 am<br>Grade 5—12 pm - 2:15 pm |
| December 14 | (W) | Marionette Show - "The Prince and the Frog"<br>by Celeste Bennett<br>10 am & 1 pm |

## PART 11: CALCULATING PAGES (Open-Apple K)

Before printing we will run a final page calc and specify where new pages are to begin.

1. Use Open-Apple K to calculate the number of pages.
2. Move the cursor through the newsletter to see how each page will appear.

   How many pages will there be in this newsletter?
3. Set **New Page** markers so the school calendar appears on its own page, and each article heading appears on the same page as the article.
   Note, this will require recalculating page breaks after each new page option is added.

## PART 12: STOPPING THE PRINTER TO ENTER MORE TEXT (EK Printer Option)

We will set a printer option that will stop the printer during printing. While printing is temporarily interrupted you will then be able to type in some information directly from the keyboard.

1. Move the cursor to the blank line below "THIS NEWSLETTER HAS BEEN FORMATTED AND EDITED BY." This is where you will put the Printer Option for later entering your name.
2. Press Open-Apple O.
3. Type: EK (for Enter from the Keyboard).................................. press **RETURN**

**NOTE**: With this feature the printer will stop printing at this point, allowing you to type information directly from the keyboard into the document. After typing and pressing Return, the printer will start up again.

This feature can be very useful for personalizing a letter or report. If you place the cursor on the EK caret ( ^ ), "Enter Keyboard" will be displayed at the bottom of the screen.

## PART 13: PAUSING THE PRINTER AFTER EACH PAGE OR AT A PARTICULAR PLACE (PE, PH Printer Options)

1. Move the cursor to the top of the file.
2. Enter: PE (for Pause Each page) from the Option menu.

With this command the printer stops at the end of each page. If the format is acceptable, you can press the Space Bar key to continue printing. If you don't like something, pressing the Escape key stops the print routine. This feature can save a lot of paper. This command also allows you to put in a new piece of paper for each page you print.

> **NOTE**: The PH (for Pause Here) printer option will also stop the printer wherever this marker is placed. This option can be placed anywhere in the file, as many times as necessary.

## PART 14: CHANGING A PAGE NUMBER (PN Printer Option)

You can change the page number *AppleWorks* would ordinarily assign to a page. With this command, text from a *series of files* can be printed as one long file and numbered sequentially.

1. To change the page number that will appear in the footer, put the cursor anywhere on the last page in the file.
2. Press Open-Apple O, type PN (for Page Number) and press Return.
3. For "number" type: 100.
   Page 4 will now be numbered 100.

With this option you control the page numbering. This command overrides how the program would number the pages. After typing PN you are asked to specify a beginning page number (e.g., page 100). From that page on, all pages will be numbered accordingly.

4. When you are finished, save this file. We will again refer to this file in Chapter 4 when we include spreadsheet information for the gymnastics team article. And later in the chapter we will transfer word processed information to a new spreadsheet.
5. Depending upon time and printer availability, print this newsletter.
6. If required, turn in this printout to your instructor.

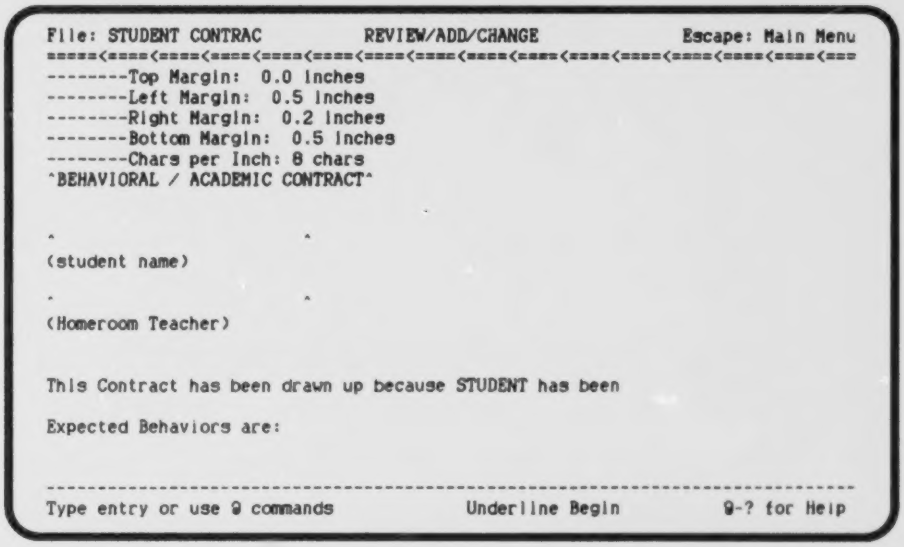
# ACTIVITY 6
## (INTERMEDIATE)
# INDENTING, SETTING MARKERS, FINDING AND REPLACING TEXT

In this activity you will try several more word processor features. You will work with a file containing the first part of a student behavior contract. This model is used by team leaders and the assistant principal at a local middle school. You will complete this document, indenting expected behaviors and consequences, setting markers, and adjusting for both single and double spacing.

By using generic terms throughout (e.g., HIM/HER, STUDENT) this file will serve as the student contract template. You will then use the find and replace command to quickly customize this contract for a particular student.

## PART 1: ADDING A WORD PROCESSOR FILE TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop........................................ press **RETURN**
3. Select: 1. Get files from current disk...................................... press **RETURN**
4. Select: --> STUDENT CONTRAC....................................... press **RETURN**
5. A student behavior contract has been started.
6. Zoom to note the margin and characters per inch settings:



```
File: STUDENT CONTRAC         REVIEW/ADD/CHANGE             Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
--------Top Margin:  0.0 inches
--------Left Margin:  0.5 inches
--------Right Margin:  0.2 inches
--------Bottom Margin:  0.5 inches
--------Chars per Inch: 8 chars
^BEHAVIORAL / ACADEMIC CONTRACT^


^                        ^
(student name)

^                        ^
(Homeroom Teacher)


This Contract has been drawn up because STUDENT has been

Expected Behaviors are:


-----------------------------------------------------------------------------
Type entry or use @ commands             Underline Begin          @-? for Help
```

7. Note the caret symbols at the top of the screen. Position the cursor on each one. Do you understand what will appear at the top of this contract when it is printed? Another way to print a solid line would be to use the SHIFT-underline keys.

## PART 2: SETTING A MULTI-LINE FOOTER (Open-Apple O, FO)

You examined the process for setting headers and footers in the SCHOOL NEWS file. For this contract we will further examine these options. Within the bottom margin the school and principal's name will appear, along with the date this contract is printed.

1. Have the cursor on the line, BEHAVIOR / ACADEMIC CONTRACT.
2. Press Open-Apple O to display the options window.
3. To set beginning and ending markers, type: FO ............................Press RETURN
4. To center text within the footer, type: CN ....................................Press RETURN
5. To vary the character per inch within the footer,
   set the CI setting to 17 ..........................................................Press RETURN
6. Press Escape to go back to the Review/Add/Change screen and type:

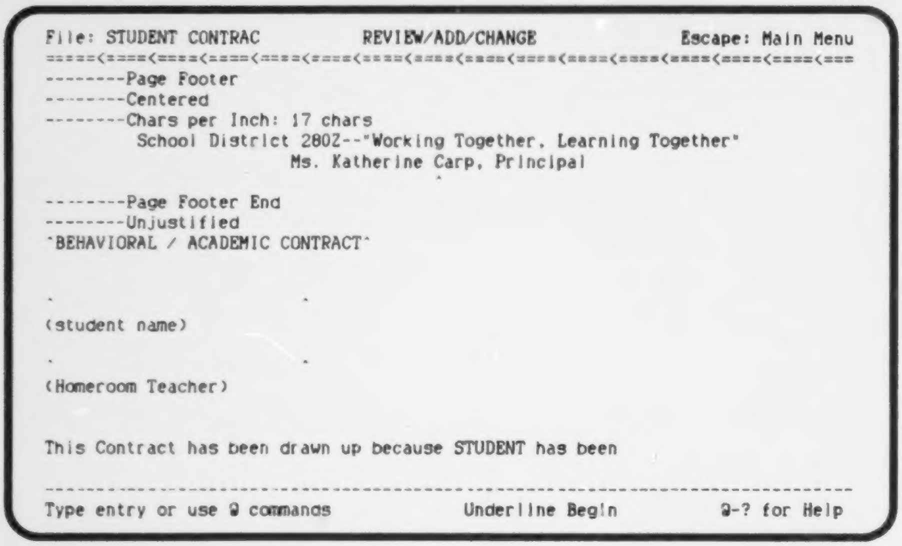
School District 280Z—"Working Together, Learning Together"
Ms. Katherine Carp, Principal

7. Press Return to begin the third footer line.

8. Return to the Options Menu and enter the PD command for printing the date.

9. When back on the Review/Add/Change screen, move the cursor **below** the "Page Footer End" marker and return the screen to normal (unjustified) justification.

10. Your screen should now look like this:



```
File: STUDENT CONTRAC          REVIEW/ADD/CHANGE            Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
--------Page Footer
--------Centered
--------Chars per Inch: 17 chars
         School District 2802--"Working Together, Learning Together"
                        Ms. Katherine Carp, Principal
                                          ^
--------Page Footer End
--------Unjustified
^BEHAVIORAL / ACADEMIC CONTRACT^


.                         .

(student name)

.                         .

(Homeroom Teacher)


This Contract has been drawn up because STUDENT has been

-------------------------------------------------------------------------------
Type entry or use @ commands             Underline Begin          @-? for Help
```

## PART 3: ADJUSTING FOR BOTH SINGLE AND DOUBLE SPACING

Now the first part of this contract is to be double spaced. The "expected behaviors and consequences" are to be single spaced.

1. Move the cursor to the "T" in "This Contract."

2. Press Open-Apple O (for Options).

3. Type: DS (for Double Space) ............................................ press **RETURN**

4. Note the highlighted bar at the top of the Option's Menu. DS will now appear as the last setting on that line.

5. Press Escape to return to the Review/Add/Change screen.

6. Note the "----------Double Space" marker on the screen.

7. Move the cursor to the line above "Expected behaviors are:"

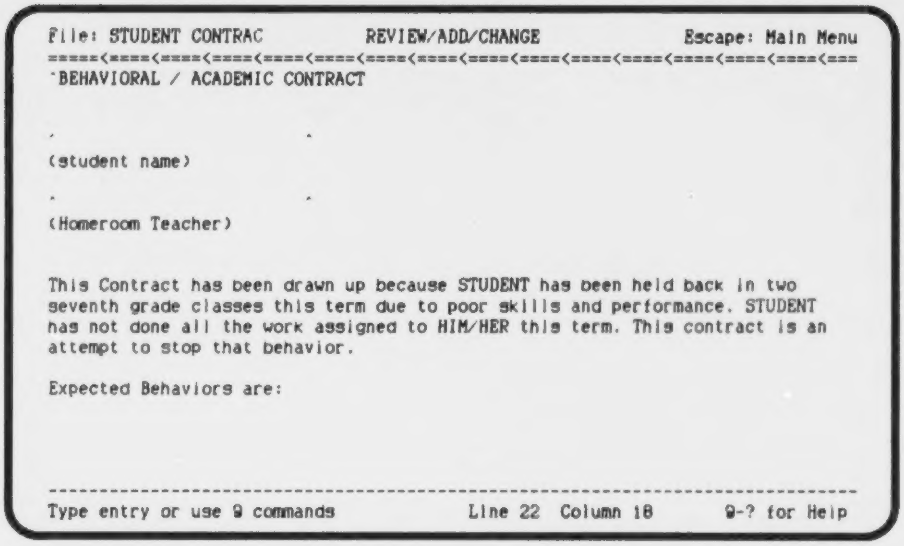
8. Set the Single Space printer option marker here.

9. After you Escape back to the Review/Add/Change screen, note how *AppleWorks* indicates double and single spacing printer options for this portion of the contract.

## PART 4: WORKING WITH WORD WRAPAROUND INDENTING TEXT (IN Printer Option)

You will type the remainder of this contract. While typing the following paragraph, do not press Return at the end of a line. As you type, *AppleWorks* will adjust the spacing. Words at the end of a line will not be split, but "wrapped" to the next line.

1. Move the cursor to the end of the first line ("STUDENT has been") and complete this section:



```
File: STUDENT CONTRAC          REVIEW/ADD/CHANGE             Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
'BEHAVIORAL / ACADEMIC CONTRACT


.                        .

(student name)

.                        .

(Homeroom Teacher)


This Contract has been drawn up because STUDENT has been held back in two
seventh grade classes this term due to poor skills and performance. STUDENT
has not done all the work assigned to HIM/HER this term. This contract is an
attempt to stop that behavior.

Expected Behaviors are:




-------------------------------------------------------------------------------
Type entry or use 9 commands              Line 22  Column 18        9-? for Help
```

Next we will set the Indenting printer option for all numbered items. With this setting the first line of each numbered paragraph will remain at the left margin. Subsequent lines of text in that paragraph will automatically indent 4 spaces to the right. This is called a hanging indent.

2. Move the cursor to the line under "Expected behaviors are:".
3. Press Open-Apple O.
4. Type: IN (for Indenting after the first line) ................................ press **RETURN**
5. For Chars: type 4 ........................................................... press **RETURN**
6. Press Escape to return to the Review/Add/Change screen.
7. As you type the following text:
    a) Press the spacebar twice after entering a period;

    b) Do not press Return *until* you are through with a sentence and ready to move to the next item; and

c) Press Return twice to leave one blank line between items; three Returns to leave two blank lines between expected behaviors and consequences.

8. Type the following text: (Don't be concerned if your lines word wrap in different places.)

Expected behaviors are:

1. STUDENT will complete all work assigned to HIM/HER during each of HIS/HER seven class periods.
2. STUDENT will complete all homework in each of HIS/HER classes. "Homework" is both work not completed during class time and specific work assigned as homework.
3. STUDENT will turn in HIS/HER homework at the appropriate time.
4. STUDENT will carry HIS/HER Carry Card to all classes, present it to the teacher and pick it up signed after class.
5. STUDENT will take the card home and show it to a parent that day.

Consequences for not meeting contract expectations:

1. STUDENT will remain at school to finish any class work not completed for that day.
2. Loss of the card means staying after school that day for ? hours.
3. Failure to stay after school will mean a ? day in-school suspension on the next school day.

9. After typing the last consequence, press Return to create two blank lines.
10. Press Open-Apple O and select: IN.
11. For number of characters select: 0.
12. Type the concluding paragraph of this contract. Note that all further text now wraps at the left margin.
13. Use SHIFT-underline keys to create signature lines above Student, Administrator, and Parent.

STUDENT will remain on this contract for the next six weeks. During that time meetings will be scheduled to discuss STUDENT's progress.

Student

Administrator

Parent

**NOTE**: Remember, indenting applies to the *second* and following lines.
To stop indenting text, enter IN, press Return, and type 0 (zero).

## PART 5: SETTING MARKERS (SM Printer Option)

Now that the contract template has been entered, you will set two printer option markers. Later, using the Find command, you can quickly move the cursor to these markers and then insert specific information for each student—such as time to be spent after school and number of days to be spent in in-house suspension.

1. Position the cursor under the second consequence, "Loss of the card means staying . . ."
2. Press Open-Apple O.
3. Type: SM (for Set a Marker) .................................................. press **RETURN**
4. For number, type: 1 .......................................................... press **RETURN**
5. Escape to the Review/Add/Change screen.
6. Position the cursor under the third consequence.
7. Set a second marker here. You can assign this marker any number, from 0 to 254—even the number 1.
8. Escape to the Review/Add/Change screen.

## PART 6: CHANGING A FILE NAME (Open-Apple N)

1. Save this word processed template on your data disk. It will now serve as a generic student contract. The student contract on the Desktop will now be customized for Susan B.

2. Press Open-Apple N (for Name Change).
   The name of the file, "STUDENT CONTRAC," will appear at the bottom of the screen, along with the insert cursor.

3. Press Open-Apple Y to erase the current filename.

4. Type: CONTRAC.SUSAN B............................................. press **RETURN**

5. Did you note the 15 character limit for a filename?

## PART 7: FINDING AND REPLACING TEXT (Open-Apple R)

This file will now be changed to contain information for Susan B. When saved, your data disk will contain both versions—the contract template and Susan's. We will use Open-Apple R to Find and Replace text.

1. Use the ruler (Open-Apple 1) to move to the top of the file.

2. Press Open-Apple R and work with Case sensitive text.

3. For replace what? type: STUDENT...................................... press **RETURN**

4. For replace with what? type: Susan........................................ press **RETURN**

5. For replace? select: One at a time........................................... press **RETURN**

6. Change each occurrence of STUDENT to "Susan."

7. Press Space Bar when done and move back to the top of the file.

> **NOTE**: Each time you use the **Replace** command, the cursor will need to be positioned at the *beginning* of the file; the search process always begins from the *current* cursor position and continues to the end of the document.

8. Use the Replace command to change all occurrences of HIM/HER to "her." Be sure to use lower case when typing "her."

9. Use the Replace command to change all occurrences of HIS/HER to "her." To speed up this process, have all replacements done at once.

10. Move the cursor to the space above the "s" in (student name) at the top of the file, switch to the overstrike cursor and type Susan Brown.

11. Switch back to the insert cursor.

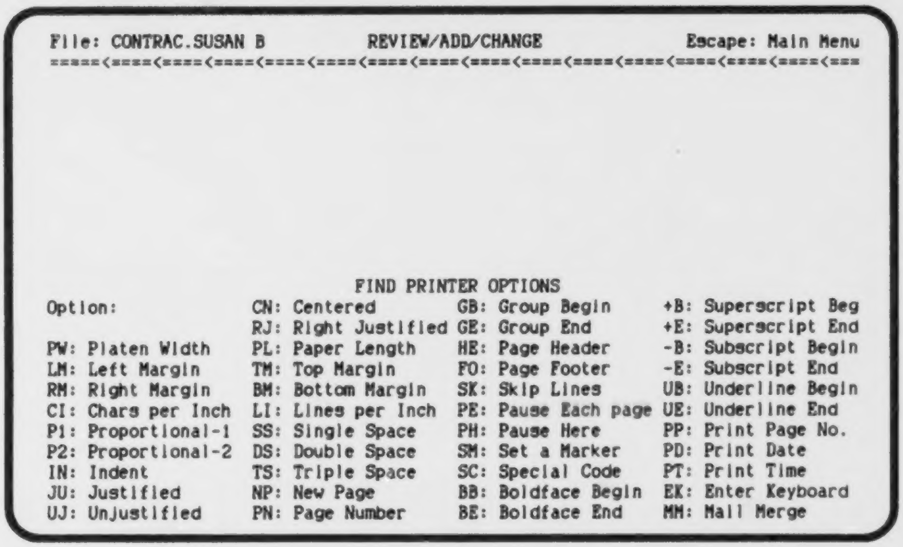
## PART 8: USING THE FIND COMMAND (Open-Apple F)

We set two markers to quickly move to a certain place in this file. We will now use this command and then type the appropriate consequences.

1. Move the cursor to the top of the file.
2. Press Open-Apple F (to Find).
3. Note the bottom of the screen.

> **NOTE**: With the Find command we can locate specific text, pages, markers, case sensitive text, and even options for printers. Remember, the cursor must be *above* whatever you are trying to find.

4. Select: Marker ............................................................ press **RETURN**
5. For Marker number? Type: 1 ............................................ press **RETURN**
6. The first marker is now highlighted. Since we will be working in this area, press Return. The process for "Finding" markers has been turned off.
7. For hours after school, replace the "?" with "two."
8. For number of days for in-house suspension, type: one.
9. Move the cursor to the top of the file. We will examine this Find command a bit further.
10. Press Open-Apple F and select Options for Printer.
    (Remember, you can select a menu item by merely typing the first letter of the option.)
11. The screen should display the now familiar Option's Menu.
    Note what is displayed in the highlighted status line at the top of the menu:



```
File: CONTRAC.SUSAN B           REVIEW/ADD/CHANGE               Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===






                                FIND PRINTER OPTIONS
Option:              CN: Centered        GB: Group Begin      +B: Superscript Beg
                     RJ: Right Justified GE: Group End        +E: Superscript End
PW: Platen Width     PL: Paper Length    HE: Page Header      -B: Subscript Begin
LM: Left Margin      TM: Top Margin      FO: Page Footer      -E: Subscript End
RM: Right Margin     BM: Bottom Margin   SK: Skip Lines       UB: Underline Begin
CI: Chars per Inch   LI: Lines per Inch  PE: Pause Each page  UE: Underline End
P1: Proportional-1   SS: Single Space    PH: Pause Here       PP: Print Page No.
P2: Proportional-2   DS: Double Space    SM: Set a Marker     PD: Print Date
IN: Indent           TS: Triple Space    SC: Special Code     PT: Print Time
JU: Justified        NP: New Page        BB: Boldface Begin   EK: Enter Keyboard
UJ: Unjustified      PN: Page Number     BE: Boldface End     MM: Mail Merge
```

We have been using **Control B** to print boldface, and **Control L** to designate underlining. These printer options can also be set from within the Options Menu. However, this method involves several more keystrokes to obtain the same results.

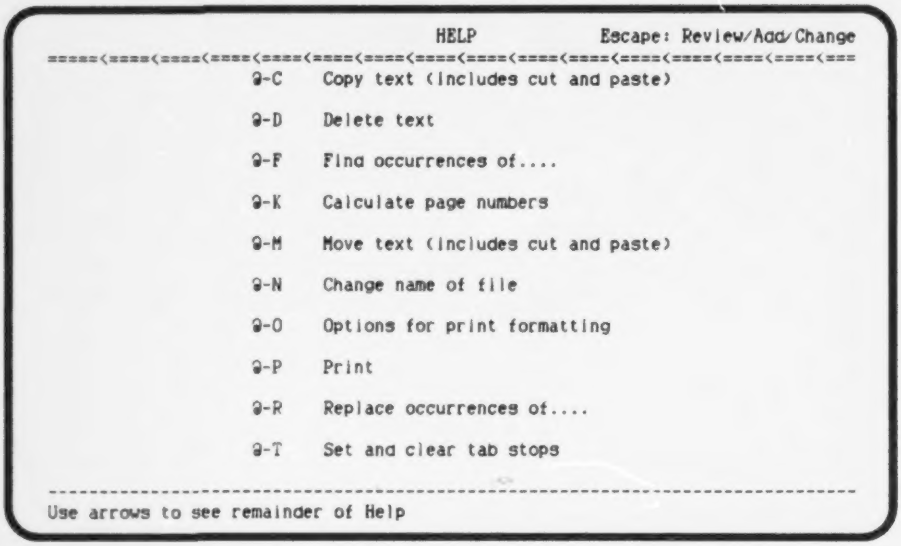
Using underlining and boldface codes within the Options Menu is very useful when you want to systematically find these carets in a word processed document. Try this:

12. For option, Type: UB (Underline Begin)................................press **RETURN**
13. You will not have to press Escape; the Find routine will immediately highlight the first occurrence.
14. Use this command to locate each occurrence of an Underline Begin marker.
15. Move the cursor to the top of the file and try a few variations of this Find command.
16. Press Open-Apple F and select: Page.
    Any idea as to why the program can't find a page number?
17. Try again, but this time run a Page Calc (Open-Apple K) first.
18. When done, save Susan's file.

## PART 9: REVIEWING WORD PROCESSOR COMMANDS (Open-Apple ?)

We have now examined most of the word processor features. You do not have to try to remember all the commands. A laminated card listing the various *AppleWorks* commands is provided with each program. And a "Help Menu" is also available for viewing the various commands on screen.

1. Press Open-Apple ?.
2. A list of commands will appear on the screen.



```
                                   HELP          Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
                       ə-C    Copy text (includes cut and paste)

                       ə-D    Delete text

                       ə-F    Find occurrences of....

                       ə-K    Calculate page numbers

                       ə-M    Move text (includes cut and paste)

                       ə-N    Change name of file

                       ə-O    Options for print formatting

                       ə-P    Print

                       ə-R    Replace occurrences of....

                       ə-T    Set and clear tab stops

-------------------------------------------------------------------------------
Use arrows to see remainder of Help
```

3. Use the Down Arrow key to view the entire list.
4. When done, press Escape to return to the Review/Add/Change screen.
5. To complete this file and review a few *AppleWorks* commands, complete the following:

   - Delete the second marker from the CONTRAC.SUSAN B file.
   - Further offset the five expected behaviors and the three consequences, by changing the left margin setting for these eight items to one inch.
   - Leave the left margin setting for the two headings ("Expected behaviors are:") and ("Consequences for not meeting contract expectations:"), and the closing paragraph set at one-half inch.

6. Save this file.

## PART 10: PRINTER TYPE SIZES AND STYLES

When your printer is printing at 10 characters per inch, the print head moves to the right exactly 1/10 of an inch after each character it types, regardless of the width of the character. With proportional print, the print head moves a variable distance, depending on the width of the character. For example, the print head moves further after typing the letter "w" than it does after typing the letter "i."

**NOTE**: You can change the value for Characters per Inch at the beginning of any paragraph, but *AppleWorks* will not let you change the number of characters (or change to proportional print) in the *middle* of a paragraph.

When you choose a proportional font, it stays in effect until you choose another one or change the characters per inch.

1. Move to a computer with a printer and add the CONTRAC.SUSAN B file to the desktop.
2. Before printing, move the cursor under expected behavior #3.
3. From the Option Menu, select P1 (for Proportional Print -1).
4. Escape to the Review/Add/Change screen; move the cursor under expected behavior #5 and return the setting to 10 characters per inch.
5. Print this file and note the difference between proportional print and 10 characters per inch print.
6. Some printers can handle one proportional font, some two, some none. Experiment with proportional -2 print.
7. Save your work.

You have now examined almost all of the printer options available for the word procesor. In Chapters Four and Five we will again use the Open-Apple O command, for adjusting printer settings for the spreadsheet and database.

# CHAPTER THREE

## THE SPELL CHECKER

## ACTIVITY 1
## VERIFYING THE SPELLING

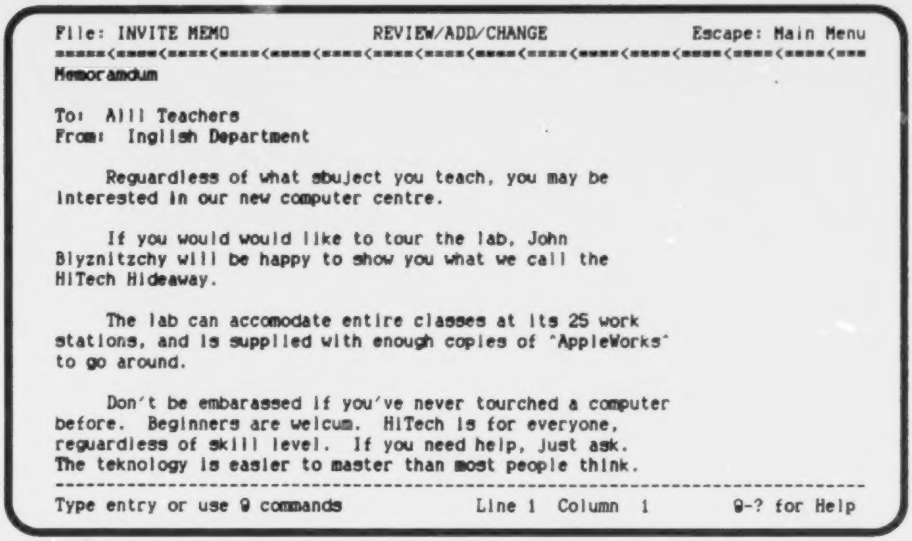
In this chapter you will have an opportunity to examine the built-in spell checker available with *AppleWorks 3.0*. Prior to this version a number of "third party" checkers were available for spell checking *AppleWorks* files. With this built-in checker you can stop at any point and check the spelling of single word, a block of text, or an entire document. When through, you return to the screen where you were last working.

When presented with an unknown (or "suspect") word you have several options: You can get a list of suggested spellings from the dictionary, correct it yourself, or ignore it.

You can view unknown words within the context of your document, or you may choose to view such words on-screen in a list. Once you have dealt with these unknown words you can have a spelling summary displayed on screen, or sent to the Clipboard to be included in a separate word processor file.

And you have options for creating (and editing) the custom dictionary that grows to include words you commonly use, but are not found in the main dictionary. Beginners will be able to use the spell checker features immediately. These are covered in Activities 1 and 2. Beginning in Activities 3 and 4 additional spell check features providing more "technical assistance" are examined.

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop.......................................... press **RETURN**
3. Select: 1. From the current disk............................................. press **RETURN**
4. Select: --> INVITE MEMO.................................................. press **RETURN**
5. A word processed memo should now be on the screen:



```
File: INVITE MEMO              REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Memoramdum

To:  Alll Teachers
From:  Inglish Department

     Reguardless of what sbuject you teach, you may be
interested in our new computer centre.

     If you would would like to tour the lab, John
Blyznitzchy will be happy to show you what we call the
HiTech Hideaway.

     The lab can accomodate entire classes at its 25 work
stations, and is supplied with enough copies of 'AppleWorks'
to go around.

     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
-------------------------------------------------------------------------------
Type entry or use 9 commands           Line 1  Column  1          9-? for Help
```

## PART 1: CHECKING ONE WORD
## CHECKING A BLOCK OF WORDS

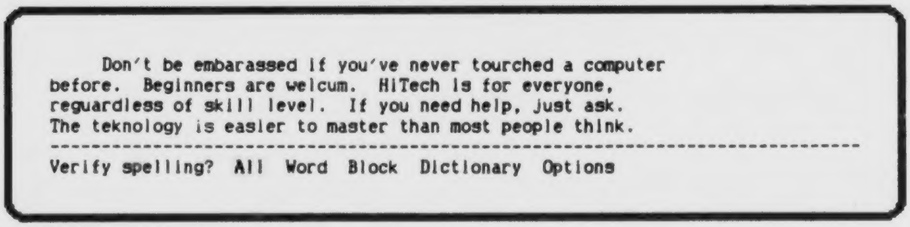
First we will see how the *AppleWorks* spell checker verifies the spelling for one questionable word, then catch some simple typos within a block of text. Two of the most frequently used options for handling *unknown words* will be examined—getting a **suggested spelling** from the accompanying dictionary, or **making** the **corrections** yourself, once an error has been brought to your attention.

**Please note:**

- Work with the Caps Lock "off."
- If using 5.25-inch disks be prepared to do some disk swapping between the PROGRAM and DICTIONARY disks.
- The Main Dictionary on a 5.25-inch DICTIONARY disk contains 68,000 words, as compared to the 90,000-words available on the 3.5-inch disk. Be prepared to note screen shots for whichever version you are using.

To check only one word:

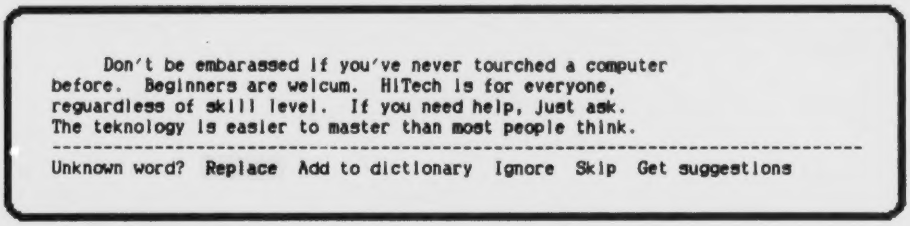
1. Place the cursor on the first word, "Memoramdum."
2. Press Open-Apple V (to Verify).
3. Note the Spell Menu at the bottom of the screen.



```
     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
--------------------------------------------------------------------------------
Verify spelling?  All  Word  Block  Dictionary  Options
```

4. For verify spelling, select: Word........................................ press **RETURN**
5. 5.25-inch disk users, if directed at the bottom of the screen, place the DICTIONARY disk in drive 1............................................ press **RETURN**

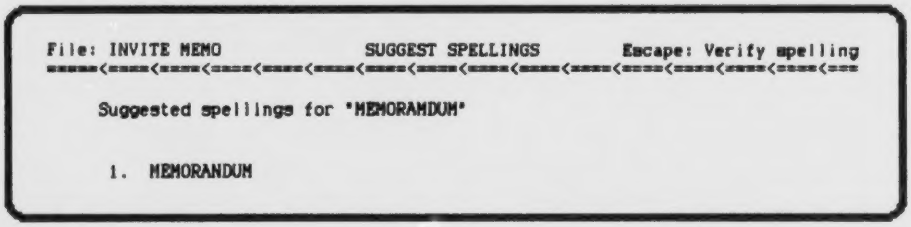
The unknown word, "Memoramdum," should now be highlighted on the Verify Spelling screen. Further options will be displayed in the menu at the bottom of the screen:



```
     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
--------------------------------------------------------------------------------
Unknown word?  Replace  Add to dictionary  Ignore  Skip  Get suggestions
```

6. For unknown word, select: Get suggestions............................ press **RETURN**

The Suggest Spellings screen will list one possible correct spelling:



```
File: INVITE MEMO              SUGGEST SPELLINGS        Escape: Verify spelling
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===

     Suggested spellings for "MEMORAMDUM"

      1.  MEMORANDUM
```

7. To replace "Memoramdum" with "Memorandum"...................... press **RETURN**

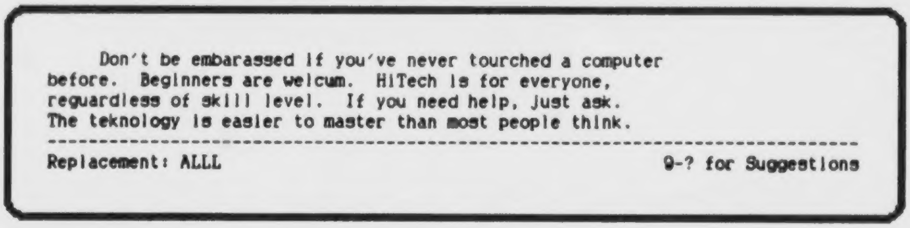
The corrected word will next appear on the Review/Add/Change screen.

Now to check a block of text:

8. Place the cursor at the beginning of the third line, "To: Alll Teachers."
9. Press Open-Apple V (to Verify).
10. For verify spelling, this time select: Block................................ press **RETURN**
11. When directed at the bottom of the screen, use the Down Arrow key to highlight all text on lines 3, 4, and 5 ...................................... press **RETURN**

*AppleWorks* will complete a quick scan of the highlighted text, verify the spelling of each word with both Custom and Main Dictionaries, and highlight the first word that does not match.

12. For the first unknown word, "Alll," select: Replace..................... press **RETURN**
13. For replace? select: This word.............................................. press **RETURN**
14. Use the Delete key at the bottom of the screen, to remove the extra "l" from "Alll."



```
     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
-------------------------------------------------------------------------------
Replacement: ALLL                                          9-? for Suggestions
```

15. Press Return.

The next unknown word, "Inglish," will be highlighted.

16. For unknown word again, select: Replace................................ press **RETURN**
17. This time for replace, select: All occurrences............................. press **RETURN**
18. At the bottom of the screen change "Inglish" to "English".............. press **RETURN**

> NOTE: By selecting the *all occurrences* option the word "Inglish" has now been corrected throughout the INVITE MEMO file.

## PART 2: CHECKING ALL WORDS IN A DOCUMENT

The basic spell check steps have been introduced. Next we will check the remainder of the words in this document, taking a closer look at the way *AppleWorks* applies its spell check rules, and further examining the options available for dealing with "suspect" words.

*As we will now be checking all words in a document, the cursor can be anywhere in the file.*

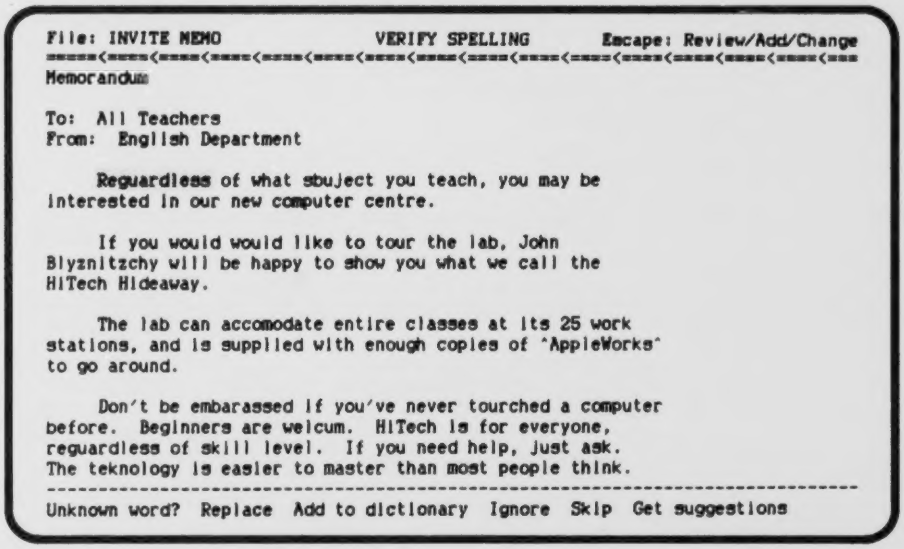
1. Press Open-Apple V.

**NOTE:** To make a choice from the bottom of the screen you can either:

- Highlight an option and press RETURN to continue, or
- Simply press the first letter of a menu option, e.g., "R" to Replace, "G" to Get suggestions.

2. For verify spelling, select: All.

*AppleWorks* will scan the entire document, verify the spelling of each word with both dictionaries, and highlight the first word in the file that does not match.



```
File: INVITE MEMO              VERIFY SPELLING       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Memorandum

To:  All Teachers
From:  English Department

     Reguardless of what sbuject you teach, you may be
interested in our new computer centre.

     If you would would like to tour the lab, John
Blyznitzchy will be happy to show you what we call the
HiTech Hideaway.

     The lab can accomodate entire classes at its 25 work
stations, and is supplied with enough copies of ^AppleWorks^
to go around.

     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
--------------------------------------------------------------------------
Unknown word?  Replace  Add to dictionary  Ignore  Skip  Get suggestions
```

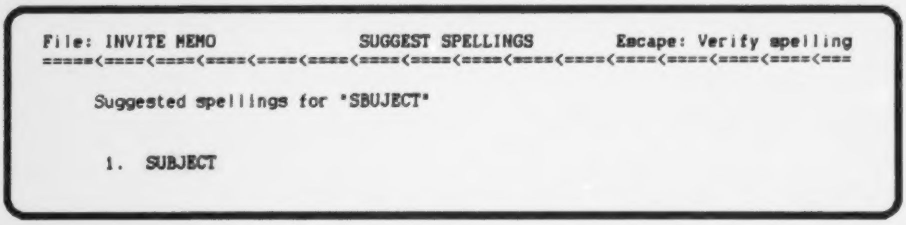
3. For "Reguardless" select: Get suggestions.

The Suggest Spellings screen will list one possible correct spelling for you to choose.

4. Press Return to replace "Reguardless" with "Regardless."

Note: *AppleWorks* provides automatic on-screen replacement.

5. For "sbuject" select: Get suggestions.
   Note: *AppleWorks* checks for errors involving reverse letters.



```
File: INVITE MEMO              SUGGEST SPELLINGS        Escape: Verify spelling
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===

     Suggested spellings for "SBUJECT"


      1.  SUBJECT
```

6. Press Return to replace "sbuject" with "subject."

"Centre" is next highlighted.

7. Again use the "Get suggestion" option and select the correct word from the list.
8. To select the correct word from the list, type the number or use the arrow key, and then press Return.

> **NOTE**: As soon as you see the correct spelling you can press the Space Bar to discontinue the dictionary search.

John Blyznitzchy's name is spelled correctly, however it is not contained in the Main Dictionary. Since this name is frequently used in Slowriver correspondence it should be added to the Custom Dictionary.

9. Select: Add to dictionary.

> **NOTE**: *AppleWorks* uses two dictionaries to verify spelling. It always uses the Main Dictionary. It also uses a Custom Dictionary. This second dictionary file:
>
> - is empty when you first use *AppleWorks*;
> - contains words that you choose to enter, such as frequently used proper names, or specialized words;
> - can have words added as a document is spell checked, or
> - can have several words added at once by using the "Creating a New Custom Dictionary" option.

10. "HiTech" is spelled correctly. Add it to the Custom Dictionary.

11. Next use either the **Replace** or **Get suggestions** options to correct the spelling for

    "accomodate,"
    "embarassed,"
    "tourched,"
    "welcum," and
    "teknology."

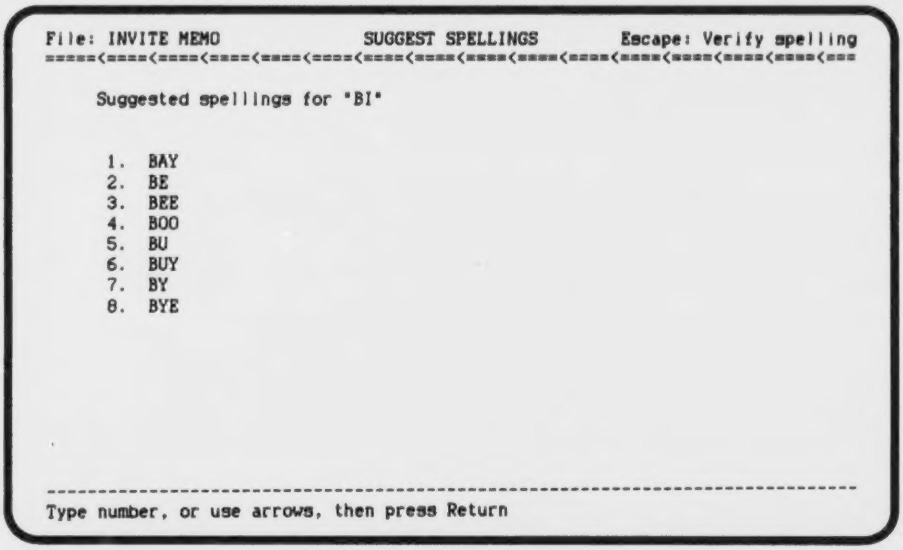
12. For "jigantic" use the Get Suggestions option, and note that *phonetic rules* are applied to determine the correct spelling.

13. And for **5.25-inch disk** users, get the suggested spellings for "bi-weekly."

> **NOTE**: *AppleWorks 3.0* provides a 68,000 word Main Dictionary on the 5.25-inch disk; and a 90,000 word dictionary on the 3.5-inch disk. As "bi-weekly" is not included in the smaller version, it will be highlighted as a "suspect" word. For 3.5-inch disk users, "bi-weekly" has been included in the Main Dictionary and will be ignored during verification.
>
> **3.5-inch disk** users can skip instructions 14, 15, and 16.

As the "bi" is used correctly when in a compound word, none of the suggested spellings are appropriate:

**(5.25-inch disk version)**



```
File: INVITE MEMO              SUGGEST SPELLINGS        Escape: Verify spelling
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===

     Suggested spellings for "BI"


      1.  BAY
      2.  BE
      3.  BEE
      4.  BOO
      5.  BU
      6.  BUY
      7.  BY
      8.  BYE









-------------------------------------------------------------------------------
Type number, or use arrows, then press Return
```

14. To cancel the Suggested Spelling screen, press the Escape key.
15. To cancel the Verify Spelling screen, press the Escape key.
16. For this unknown word, select: Ignore.

**NOTE**: *AppleWorks* will not question an "ignored" word again in a spell session. If used in another document, however, an "ignored" word would again be questioned.

17. Note the spell check rules *AppleWorks* applies as you get suggestions for: "arent," "sentralized," and "klas."
18. Checking all words in this document will be completed when you indicate you would like to remove the second occurrence of "would."
19. **Do not save** this file. In Activity 3 you will again verify the spelling of this file, this time to receive various copies of a spelling summary.

# ACTIVITY 2
# VERIFYING THE SPELLING FROM A LIST

The main options for spell checking words as they appear in a document have been introduced. Checking words **in context** is *AppleWorks* preset method for verifying. *AppleWork's* second method for verifying words—where all questionable words are displayed **in a list**—will be examined in this activity. This alternative method allows for a speedy verification as *many words* can be examined at one time, and either immediately ignored, corrected, or added to the Custom Dictionary.

**Please note:**

- If using 5.25-inch disks be prepared to do some disk swapping between the PROGRAM and DICTIONARY disks.
- Continue to take note of the screen shots for the disk version you are using.

## PART 1: CHANGING THE VERIFICATION METHOD

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop.......................................... press **RETURN**
3. Select: 1. From the current disk............................................. press **RETURN**
4. Select: --> SCHOOL NEWS OK........................................... press **RETURN**

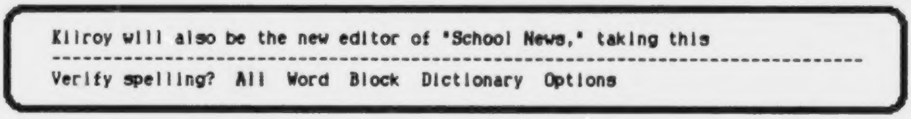
To acquire a list of "suspect" words you must first switch to the List Method—which is done from within the Spelling Menu.

*As we will be checking all words in a document, the cursor can be anywhere in the file.*

5. Press Open-Apple V.
6. For verify spelling, begin by selecting: Options.
7. For spelling option, select: Method.

8. For method, select: From a list.

Now that the verifying method has been determined, *AppleWorks* returns you to the familiar Verify Spelling Menu, with correction options again listed at the bottom of the screen:



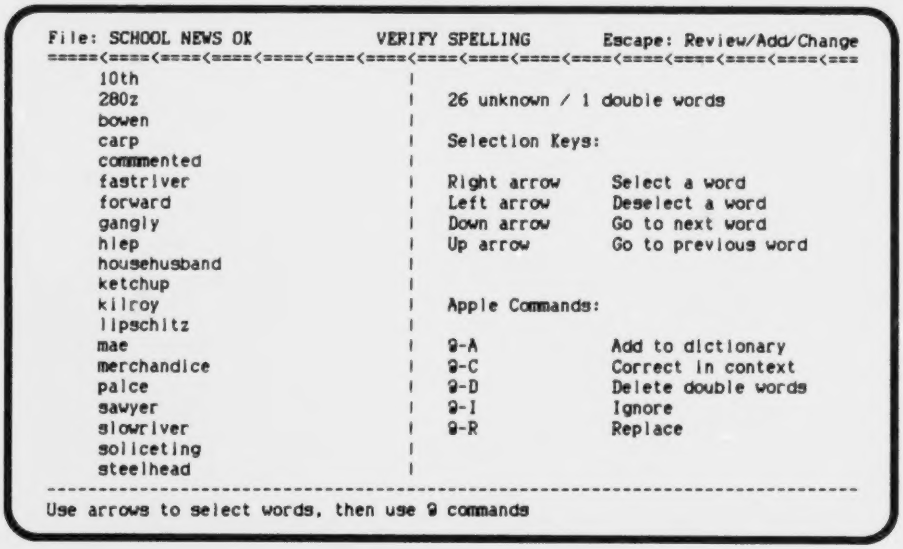
```
Kilroy will also be the new editor of "School News," taking this
--------------------------------------------------------------------------------
Verify spelling? All  Word  Block  Dictionary  Options
```

9. For verify spelling, select: All

10. 5.25-inch users, if directed at the bottom of the screen, place the DICTIONARY disk in drive 1.

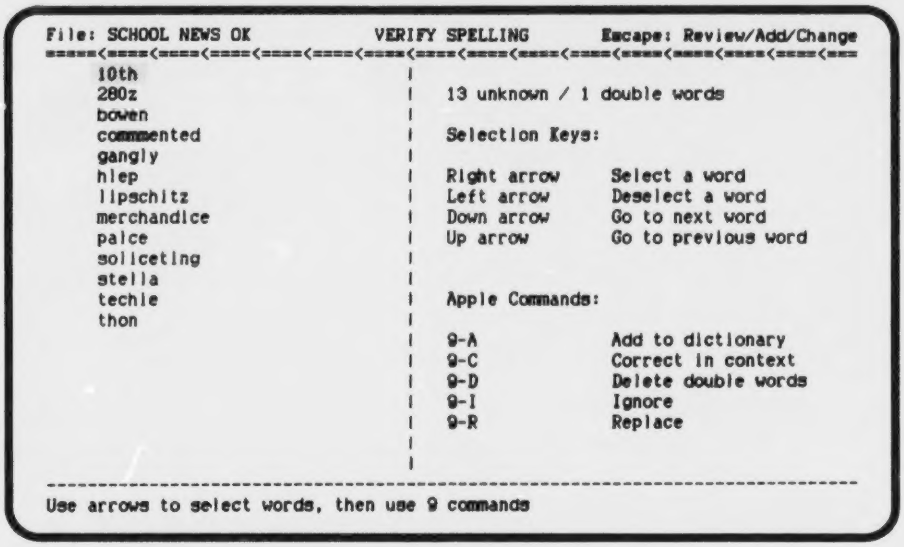
After scanning the document and checking both Main and Custom Dictionaries, *AppleWorks* will display the following alphabetized list of unknown words:

**(5.25-inch disk version)**



```
File: SCHOOL NEWS OK          VERIFY SPELLING       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
     10th                              |
     280z                              |  26 unknown / 1 double words
     bowen                             |
     carp                              |  Selection Keys:
     commmented                        |
     fastriver                         |  Right arrow    Select a word
     forward                           |  Left arrow     Deselect a word
     gangly                            |  Down arrow     Go to next word
     hlep                              |  Up arrow       Go to previous word
     househusband                      |
     ketchup                           |
     kilroy                            |  Apple Commands:
     lipschitz                         |
     mae                               |  9-A            Add to dictionary
     merchandice                       |  9-C            Correct in context
     palce                             |  9-D            Delete double words
     sawyer                            |  9-I            Ignore
     slowriver                         |  9-R            Replace
     soliceting                        |
     steelhead                         |
--------------------------------------------------------------------------------
Use arrows to select words, then use 9 commands
```

**(3.5-inch disk version)**



```
File: SCHOOL NEWS OK             VERIFY SPELLING       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
     10th                             |
     280z                             |   13 unknown / 1 double words
     bowen                            |
     commented                        |   Selection Keys:
     gangly                           |
     hlep                             |   Right arrow     Select a word
     lipschitz                        |   Left arrow      Deselect a word
     merchandice                      |   Down arrow      Go to next word
     palce                            |   Up arrow        Go to previous word
     soliceting                       |
     stella                           |
     techie                           |   Apple Commands:
     thon                             |
                                      |   9-A             Add to dictionary
                                      |   9-C             Correct in context
                                      |   9-D             Delete double words
                                      |   9-I             Ignore
                                      |   9-R             Replace
                                      |
                                      |
--------------------------------------------------------------------------------
Use arrows to select words, then use 9 commands
```

## PART 2: IGNORING WORDS IN THE LIST
## IGNORING WORDS IN CONTEXT

Note how information is displayed on the Verify Spelling screen:

- A list of unknown words is displayed on the left-hand side;
- The number of unknown and double word occurrences are listed at the top right;
- Four arrow keys are avilable for moving the cursor and selecting words; and
- Five Open-Apple commands are available from this screen for making corrections.

Examining the screen we can immediately see several words that can be ignored. These words are spelled correctly; they are not contained, however, in the Main Dictionary. First we will ignore several correctly spelled words. In Part 3 we will see how words are added to the Custom Dictionary.

1. With the cursor on "10th" press Open-Apple I (to Ignore).
2. Note the unknown word counter at the top of the screen.
3. If working with the dictionary on a **5.25-inch disk**, use the Down Arrow key and Open-Apple I command to also ignore:

   "280z"
   "forward"
   "ketchup"

4. If working with the dictionary on a **3.5-inch disk**, use the Down Arrow key and Open-Apple I command to also ignore: "280z."

5. Again note the unknown word counter.

"Bowen" might be correct, and viewing this word in context would be helpful.

6. Press Open-Apple C (to Correct in context).

7. The spelling is correct. Use the Ignore option at the bottom of the screen.

8. Select and view "Stella" in context, then ignore.

## PART 3: ADDING WORDS TO THE DICTIONARY

Moving through the list you will note a number of words that occur frequently in Slowriver correspondence. These words can be added to the Custom Dictionary, and will then not be questioned again in *any* word processor document.

1. With the cursor on "fastriver" press Open-Apple A (to Add to dictionary).

2. When questioned whether to add this word to the dictionary, indicate "Yes."

3. If working with the dictionary on a **5.25-inch disk**, quickly add a number of words to the Custom Dictionary by moving the cursor down the list, and marking the following words with the Right Arrow key:

   -> carp
   -> kilroy
   -> mae
   -> sawyer
   -> slowriver
   -> steelhead
   -> suntech
   -> swigger

4. If working with the dictionary on a **3.5-inch disk**, quickly add a number of words to the Custom Dictionary, by moving the cursor down the list, and marking the following words with the Right Arrow key:

   -> kilroy
   -> slowriver
   -> steelhead
   -> suntech

5. Use the Open-Apple A command to quickly add these words to the Custom Dictionary.

Note that with these words removed from the list, the screen now indicates fewer unknown words. In future documents the words just added to the Custom Dictionary will not be questioned.

## PART 4: CORRECTING WORDS IN A LIST

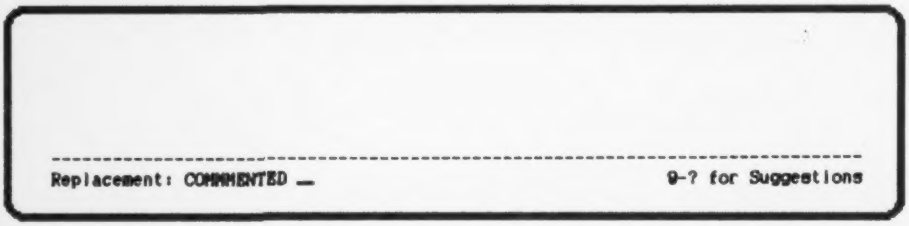
There are some obvious spelling (or typo) errors. These can be corrected using the "Replace" option.

1. Mark the following words with the Right Arrow key:

   -> commmented
   -> hlep

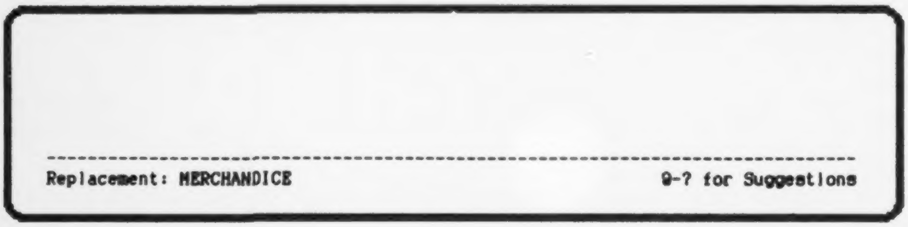
2. Press Open-Apple R (to Replace).

The cursor is now available at the bottom of the screen for editing.



```
--------------------------------------------------------------------------------
Replacement: COMMMENTED _                                    9-? for Suggestions
```

3. Change "commmented" to "commented" and press Return.
4. Correct the next word as it appears at the bottom of the screen.
5. With the cursor on "merchandice," press Open-Apple R.
6. Note the bottom of the Verifying screen—a "get suggestions" keystroke is available.



```
--------------------------------------------------------------------------------
Replacement: MERCHANDICE                                     9-? for Suggestions
```

7. Press Open-Apple ? to receive suggestions for "merchandice."
8. Press Return to accept the correct spelling.
9. For the remaining words use the various options to either correct words in context, ignore, or replace them.

**NOTE**: There are two ways to "Get Suggestions:"

- Pressing Open-Apple C to check in context, or
- Pressing Open-Apple R for replacement and then Open-Apple ?.

**NOTE**: When getting the suggested word list you can press the Space Bar to stop the search as soon as you see the correct spelling.

10. When back on the Verify Spelling screen use the appropriate Open-Apple commands to correct the double word error.
11. When done you will return to the Review/Add/Change screen.

All suspect words within the SCHOOL NEWS OK file have now been dealt with. In the process you have added a list of words to the Custom Dictionary. As this supplementary dictionary includes more words, the process for verifying words will speed up. Words you commonly use will be automatically ignored.

Now on to the next activity.

# ACTIVITY 3
# GETTING A SPELLING SUMMARY

When you have removed all the unknown and double occurrence words in your document *AppleWorks 3.0* returns you to your document. With the correct pre-verification settings you could next receive a *spelling summary*. This summary will not be automatically provided but can be displayed on-screen by selecting the appropriate options from the Verify menu.

*AppleWorks 3.0* provides four spelling summary options:

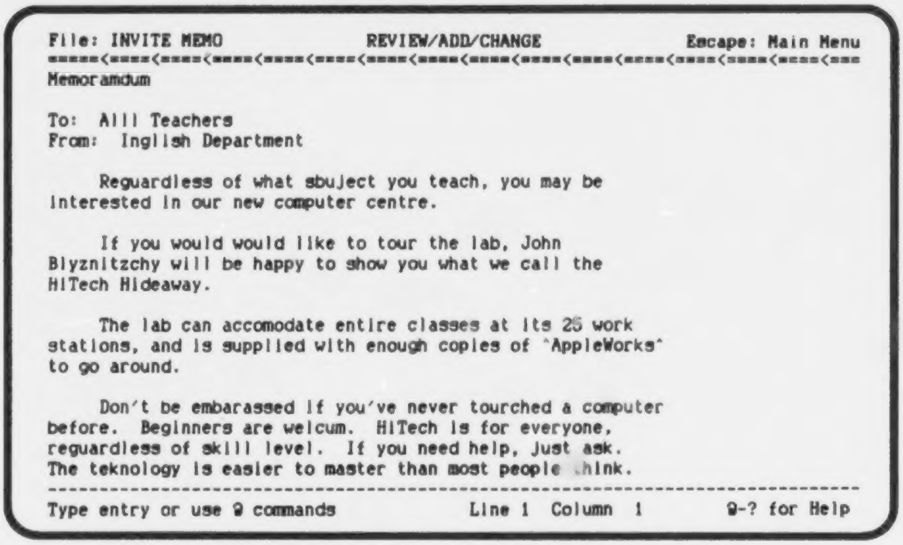
- A complete on-screen summary listing unknown words and their corrected spellings;
- A summary and total of *only* unknown words, and a total word count;
- A spelling summary copied to the Clipboard, where it can be transferred into a word processor document for saving and / or printing; and
- Nothing, if you don't want *AppleWorks* to display a summary.

## PART 1: DISPLAYING A COMPLETE SPELLING SUMMARY

For this activity you will use the original version of the INVITE MEMO (the uncorrected one on your data disk). First you will preset the summary option so a complete **on-screen summary** will be available. Then you will correct or add a few words to the Custom Dictionary. After the remainder of the unknown words are ignored, you will receive a summary.

1. From the Main Menu, add INVITE MEMO from the data disk.
2. If your screen indicates you are about to have more than one INVITE MEMO on the Desktop, indicate "Yes" you want to do this.

An uncorrected version of INVITE MEMO should now be on the screen.

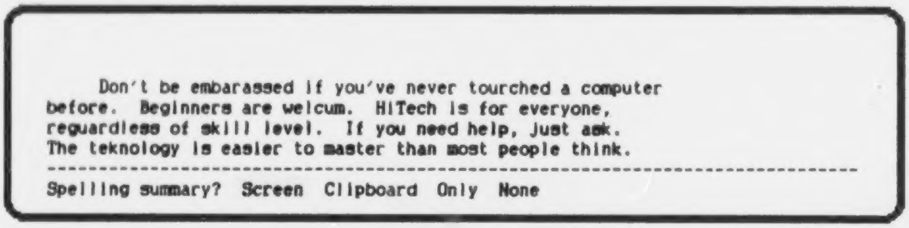


```
File: INVITE MEMO             REVIEW/ADD/CHANGE            Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Memoramdum

To:  Alll Teachers
From:  Inglish Department

     Reguardless of what sbuject you teach, you may be
interested in our new computer centre.

     If you would would like to tour the lab, John
Blyznitzchy will be happy to show you what we call the
HiTech Hideaway.

     The lab can accomodate entire classes at its 25 work
stations, and is supplied with enough copies of "AppleWorks"
to go around.

     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
----------------------------------------------------------------------------
Type entry or use 9 commands              Line 1  Column  1        9-? for Help
```

*First we must select the Summary option.*

3. Press Open-Apple V.
4. Select: Options.
5. Select: Summary.

The four Summary Menu choices are available at the bottom of the screen:



```
     Don't be embarassed if you've never tourched a computer
before.  Beginners are welcum.  HiTech is for everyone,
reguardless of skill level.  If you need help, just ask.
The teknology is easier to master than most people think.
----------------------------------------------------------------------------
Spelling summary?  Screen  Clipboard  Only  None
```

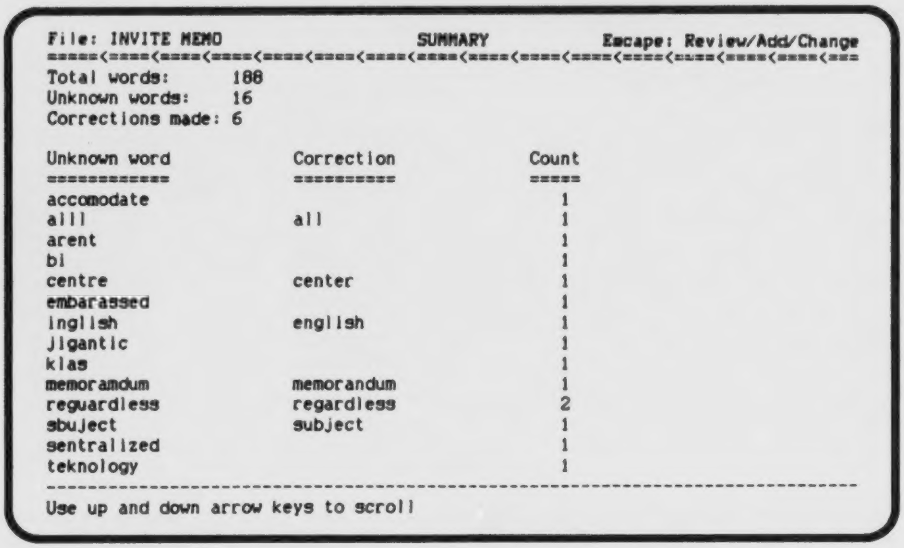
6. For Spelling summary, select: Screen.
7. To verify the spelling for all words in this file select: All.
8. Begin by correcting all occurrences of:

   "Memoramdum"
   "Alll"
   "Inglish"
   "Reguardless"
   "sbuject"
   "centre"

9. To see how the spelling summary handles unchanged words, ignore the remaining words as they are highlighted on the screen.

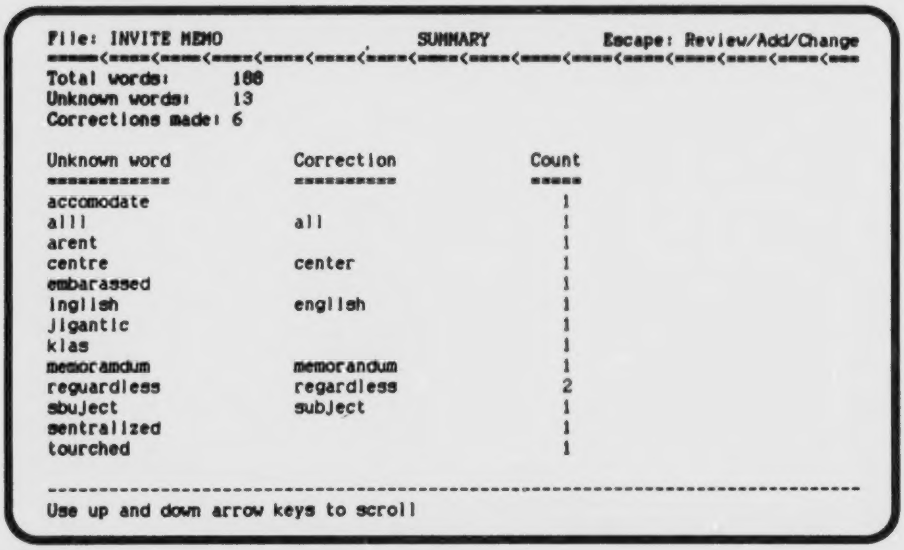
10. After ignoring "klas" and the double occurrence of "would," *AppleWorks* will present a complete Summary screen:

**(5.25-inch disk version)**



```
File: INVITE MEMO                   SUMMARY            Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Total words:      188
Unknown words:    16
Corrections made: 6

Unknown word            Correction             Count
============            ==========             =====
accomodate                                        1
alll                    all                       1
arent                                             1
bi                                                1
centre                  center                    1
embarassed                                        1
inglish                 english                   1
jigantic                                          1
klas                                              1
memoramdum              memorandum                1
reguardless             regardless                2
sbuject                 subject                   1
sentralized                                       1
teknology                                         1
--------------------------------------------------------------------------------
Use up and down arrow keys to scroll
```

**(3.5-inch disk version)**



```
File: INVITE MEMO                   SUMMARY            Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Total words:      188
Unknown words:    13
Corrections made: 6

Unknown word            Correction             Count
============            ==========             =====
accomodate                                        1
alll                    all                       1
arent                                             1
centre                  center                    1
embarassed                                        1
inglish                 english                   1
jigantic                                          1
klas                                              1
memoramdum              memorandum                1
reguardless             regardless                2
sbuject                 subject                   1
sentralized                                       1
tourched                                          1

--------------------------------------------------------------------------------
Use up and down arrow keys to scroll
```

11. Use the Arrow keys to scroll through the list.

From this screen you can now see: The total words in the document, number of unknown words identified, number of corrections made, the type of correction made, and the number of times each unknown word appeared in the document.

12. Press ESC to return to the Review/Add/Change screen.

## PART 2: PLACING A SPELLING SUMMARY ON THE CLIPBOARD

To examine the second summary option—printing a **summary to the Clipboard**—you will use the same, partially corrected version of INVITE MEMO. After making a few more corrections you will open a new word processor file and copy a summary to and from the Clipboard.

*We must again begin by selecting the Summary option.*

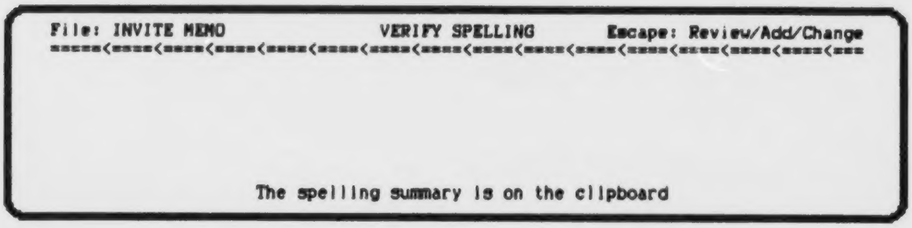
1. Press Open-Apple V.
2. Select: Options.
3. Select: Summary.

The four Summary Menu choices are again available at the bottom of the screen:

4. Select: Clipboard.
5. Select: All.
6. This time correct:

   "accomodate"
   "embarassed"
   "tourched"

7. Although they are wrong, add "welcum," and "teknology" to the Custom Dictionary.
8. Ignore the remaining words as they are highlighted on the screen.
9. After ignoring "klas" and the double occurrence of "would," *AppleWorks* will indicate that the complete spelling summary is on the Clipboard.



```
File: INVITE MEMO              VERIFY SPELLING       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===



                  The spelling summary is on the clipboard
```

10. Press the Space Bar to continue.

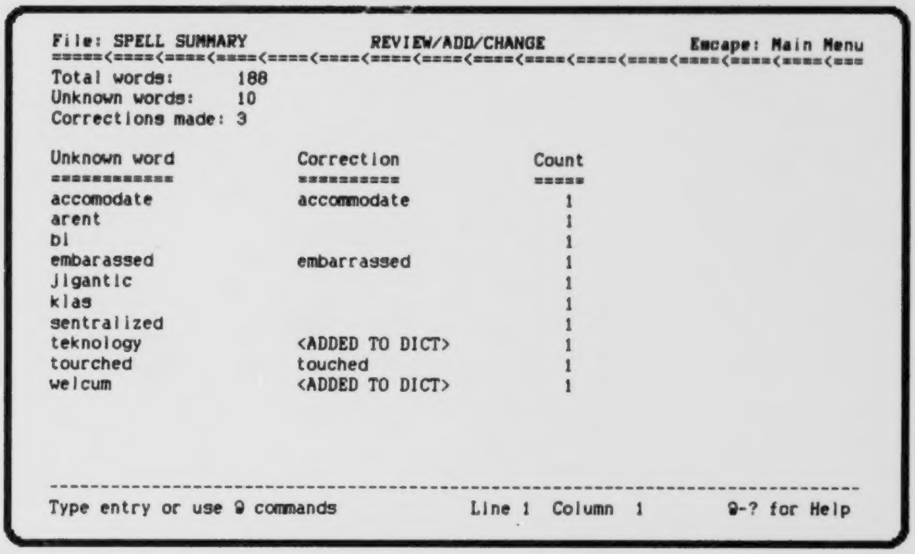
To see this spelling summary we need to open a new word processor file.

11. Escape to the Main Menu and add a new word processor, SPELL SUMMARY, file to the Desktop.

12. Press Open-Apple C to receive a copy from the Clipboard.

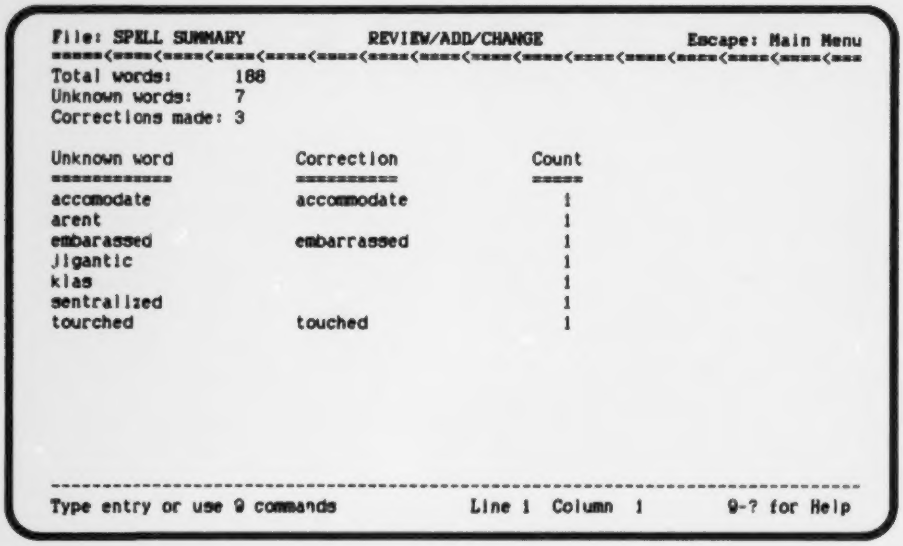
A new word processor file listing total and unknown words, number and type of corrections, and an occurrence count are available for saving to disk and/or printing:

**(5.25-inch disk version)**



```
File: SPELL SUMMARY           REVIEW/ADD/CHANGE           Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Total words:      188
Unknown words:    10
Corrections made: 3

Unknown word            Correction             Count
============            ==========             =====
accomodate              accommodate              1
arent                                            1
bi                                               1
embarassed              embarrassed              1
jigantic                                         1
klas                                             1
sentralized                                      1
teknology               <ADDED TO DICT>          1
tourched                touched                  1
welcum                  <ADDED TO DICT>          1



--------------------------------------------------------------------------------
Type entry or use 9 commands           Line 1  Column  1         9-? for Help
```

**(3.5-inch disk version)**



```
File: SPELL SUMMARY          REVIEW/ADD/CHANGE          Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Total words:      188
Unknown words:    7
Corrections made: 3

Unknown word            Correction             Count
============            ==========             =====
accomodate              accommodate              1
arent                                            1
embarassed              embarrassed              1
Jigantic                                         1
klas                                             1
sentralized                                      1
tourched                touched                  1








-------------------------------------------------------------------------------
Type entry or use 9 commands           Line 1  Column  1         9-? for Help
```

13. Save this file.

## PART 3: RECEIVING A SPELLING SUMMARY WITH NO CORRECTIONS

To examine the third summary option you will use the same, still partially corrected, version of the INVITE MEMO. Now you will preset the summary option to receive **only a list of unknown** words and the total word count. No spell verification will occur.

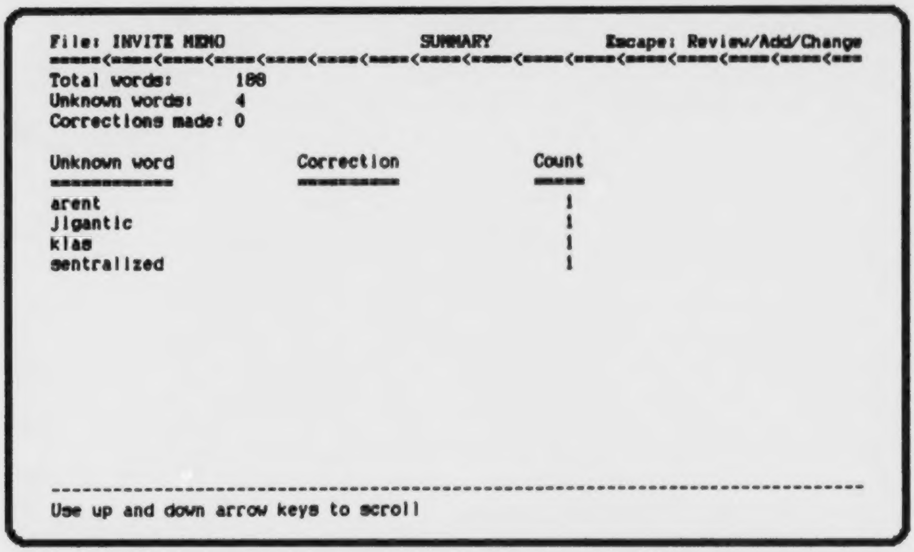
1. Press Open-Apple Q to switch back to the INVITE MEMO file.

2. Press Open-Apple V.

Select the following Summary options.

3. Select: Options.
4. Select: Summary.
5. For spelling summary, select: Only.
6. Select: All.

The following Summary screen will next be displayed:



```
File: INVITE MEMO                     SUMMARY          Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Total words:       188
Unknown words:     4
Corrections made:  0

Unknown word            Correction             Count
============            ==========             =====
arent                                              1
jigantic                                           1
klas                                               1
sentralized                                        1







--------------------------------------------------------------------------------
Use up and down arrow keys to scroll
```

With this summary option the spelling checker has been "turned off" except for producing a list of unknown words, the word count, and the total of unknowns. While unable to print this summary using Open-Apple P, a copy could be obtained using Open-Apple H (for hardcopy).

7. Press Escape to return to the Review/Add/Change screen.

8. To complete this activity, set the Summary setting to "None" and correct the final errors in this document.

# ACTIVITY 4
# WORKING WITH THE CUSTOM DICTIONARY
## (Intermediate)

The *AppleWorks* Custom Dictionary usually grows word by word as you verify the spelling of many documents. Sometimes, however, words are accidentally added to this dictionary and must be removed. And there are some words you commonly use that could be added at one time to the Custom Dictionary.

In this section you will examine the procedures for adding, removing, and correcting words in the Custom Dictionary. This process is quite simple—once you have made some disk drive access adjustments, and get used to the idea of "recycling" a dictionary file. To directly work with the Custom Dictionary involves six steps:

- Adjusting the **disk drive location** so both the AW PROGRAM and Custom Dictionary file are accessed through the same disk drive;
- Adding the Custom Dictionary to the Desktop so it can be viewed;
- Entering or editing the word list within the Custom Dictionary;
- Opening a *new* Custom Dictionary file and transferring desired words from the *old* Custom Dictionary;
- Removing the old Custom Dictionary from the disk; and
- Saving this new Custom Dictionary.

The Custom Dictionary file that comes with *AppleWorks 3.0* is empty at first. As you work through the activities in this chapter you added some words to this dictionary. Now we can take a look at these words, remove any errors, and add some of our own words.

Although the Custom Dictionary file contains text, it is unlike a typical word processor file. And while *AppleWorks* can recognize this file, a slightly varied procedure is used for getting it onto the Desktop. Technically this file is called an ASCII file and is added to the Desktop by creating a word processor file—not from "Scratch"—but from an "ASCII" file. Let's try.

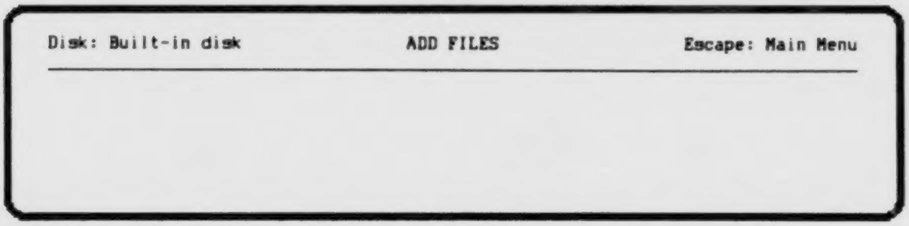
## PART 1: ADJUSTING THE DISK DRIVE LOCATION

> **NOTE**: To access the Custom Dictionary (ASCII) file stored on the DICTIONARY disk, **5.25-inch** disk drive users will first need to set *AppleWorks* to access only one disk drive.
>
> If your *AppleWorks 3.0* is on a **3.5-inch disk**, you will need to set *AppleWorks* to access Disk 1, (Slot 5).

If your *AppleWorks 3.0* is on two (or more) **5.25-inch disks**, complete the following steps to make sure that both PROGRAM and DICTIONARY disks work from drive 1. Then proceed to PART 2.

1. Escape to the Main Menu.
2. Select: 1. Add files to the Desktop. ........................................ press **RETURN**
3. For Get files from, select: 2. A different disk ............................ press **RETURN**
4. For which disk drives you can use, select: 1. Disk drive 1............. press **RETURN**
   *Note: If working with an Apple IIc, select: 1. Built-in disk*
5. Note the disk location indicator in the top left-hand corner of the Add Files screen.

**(5.25-inch disk version)**

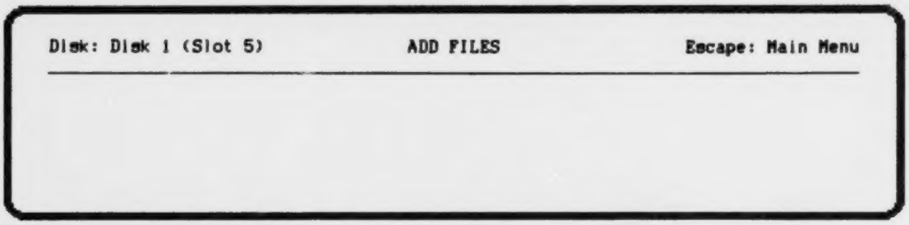


```
Disk: Built-in disk                ADD FILES                Escape: Main Menu
```

If your *AppleWorks 3.0* is on a **3.5-inch disk**, complete the following steps to access the Custom Dictionary.

1. Escape to the Main Menu.
2. Select: 1. Add files to the Desktop. ........................................ press **RETURN**
3. For Get files from, select: 2. A different disk ............................ press **RETURN**
4. For which disk drives you can use, select: Disk 1 (Slot 5) ............ press **RETURN**
5. Note the disk location indicator in the top left-hand corner of the Add Files screen.

**(3.5-inch disk version)**



```
Disk: Disk 1 (Slot 5)            ADD FILES            Escape: Main Menu
```

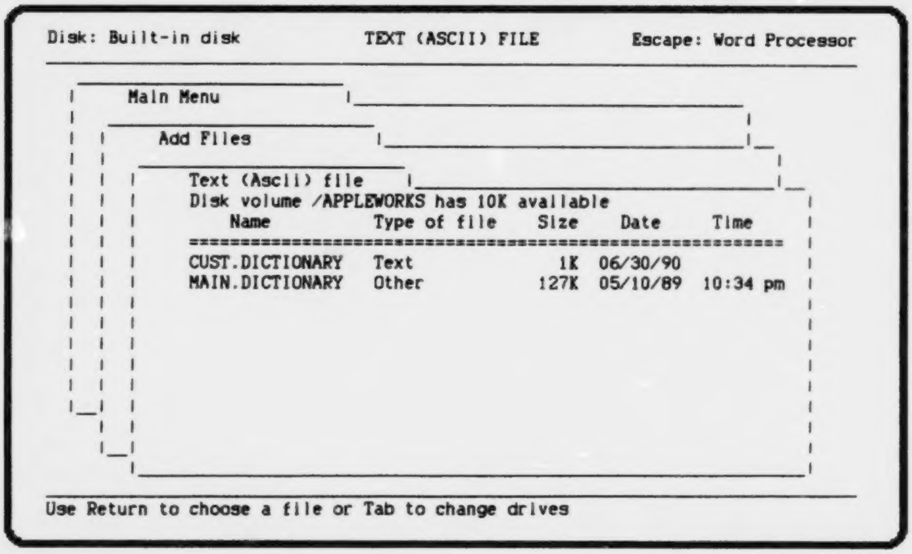
## PART 2: ADDING AN ASCII FILE TO THE DESKTOP

From the Add Files menu you will now add the Custom Dictionary—which is an ASCII text file—to the Desktop. This requires a different loading procedure from the typical word processor file.

1. From the Add Files menu select: 3. Make a new file for the Word Processor.
2. Press Return.
3. Select: 2. From a text (ASCII) file ........................................ press **RETURN**
4. 5.25-inch disk drive users, if requested to place the DATA disk in Drive 1, place the DICTIONARY disk in Drive 1, and ........................................ press **RETURN**

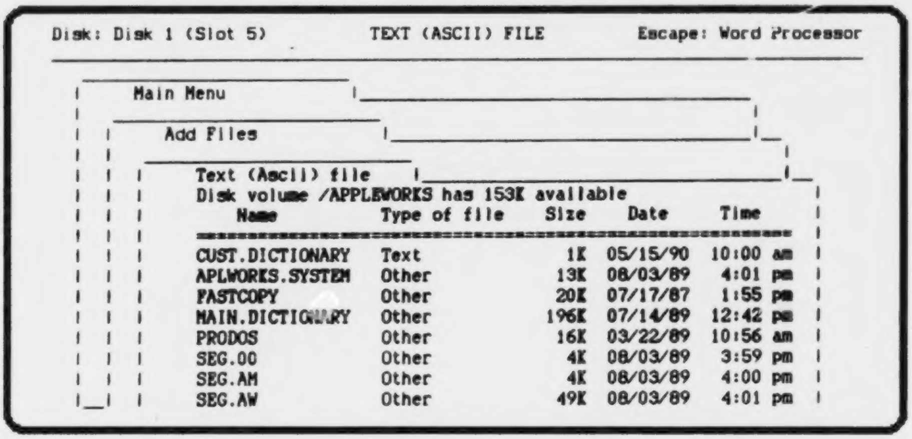
Note that the Custom Dictionary is listed as a "Text" file:

**(5.25-inch disk version)**



```
Disk: Built-in disk          TEXT (ASCII) FILE        Escape: Word Processor
--------------------------------------------------------------------------
  ___________________
 |    Main Menu      |____________________________
 |   ___________________                          |
 |  |    Add Files      |_________________________|__
 |  |   ___________________                          |
 |  |  |    Text (Ascii) file |_______________________|__
 |  |  |    Disk volume /APPLEWORKS has 10K available    |
 |  |  |        Name          Type of file   Size   Date      Time     |
 |  |  |    ==========================================================|
 |  |  |    CUST.DICTIONARY   Text            1K  06/30/90             |
 |  |  |    MAIN.DICTIONARY   Other         127K  05/10/89  10:34 pm   |
 |  |  |                                                               |
 |__|  |                                                               |
    |__|                                                               |
       |_______________________________________________________________|
--------------------------------------------------------------------------
Use Return to choose a file or Tab to change drives
```

(3.5-inch disk version)



```
Disk: Disk 1 (Slot 5)          TEXT (ASCII) FILE          Escape: Word Processor

     Main Menu
       Add Files
         Text (Ascii) file
         Disk volume /APPLEWORKS has 153K available
             Name           Type of file    Size    Date      Time
         ==============================================================
         CUST.DICTIONARY    Text              1K  05/15/90  10:00 am
         APLWORKS.SYSTEM    Other            13K  08/03/89   4:01 pm
         FASTCOPY           Other            20K  07/17/87   1:55 pm
         MAIN.DICTIONARY    Other           196K  07/14/89  12:42 pm
         PRODOS             Other            16K  03/22/89  10:56 am
         SEG.00             Other             4K  08/03/89   3:59 pm
         SEG.AM             Other             4K  08/03/89   4:00 pm
         SEG.AW             Other            49K  08/03/89   4:01 pm
```

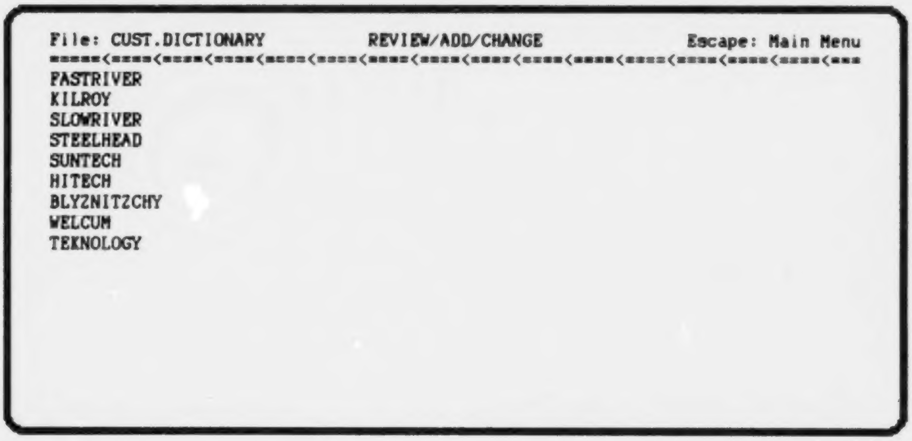
5. Select the file, CUST.DICTIONARY........................................ press **RETURN**

6. 5.25-inch disk users, if requested, switch the AW PROGRAM and DICTIONARY disks. Keep in mind that in this case, DATA disk means your DICTIONARY disk.

7. When asked to type a name for this new file, just press Return.

## PART 3: EDITING THE CUSTOM DICTIONARY

The CUST.DICTIONARY file has now been added to the Desktop as an *AppleWorks* word processor file. If you have added words to the dictionary from sources other than INVITE MEMO, and SCHOOL NEWS OK, your screen may look different than the one displayed here:



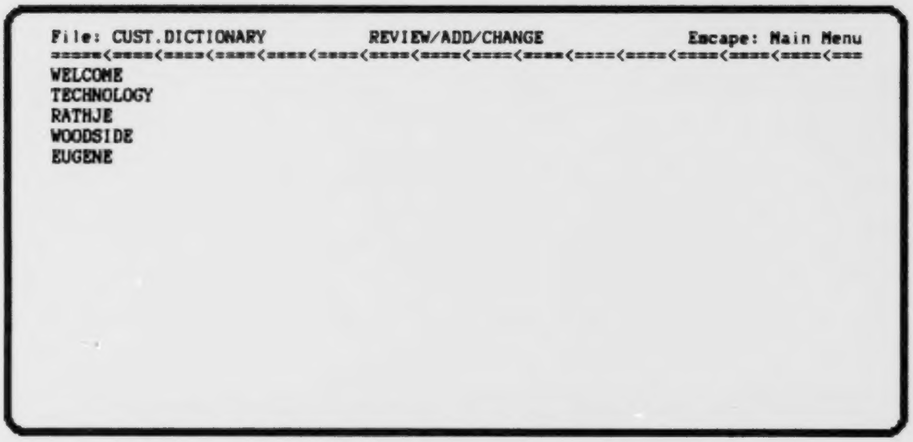
```
File: CUST.DICTIONARY          REVIEW/ADD/CHANGE          Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
FASTRIVER
KILROY
SLOWRIVER
STEELHEAD
SUNTECH
HITECH
BLYZNITZCHY
WELCUM
TEKNOLOGY
```

Next you will see how easy it is to add and remove words, and make corrections within this file. Remember, CUST.DICTIONARY is now a typical *AppleWorks* word procesor file.

> **NOTE**: When editing a Custom Dictionary file:
>
> - Words can be entered one to a line or one after another; however, there must be at least one space between each word.
> - Either upper- or lower-case can be used.

1. Correct "WELCUM" and "TEKNOLOGY" using either the Delete key or the Open-Apple Y command.
2. Use the Open-Apple D command to remove all other words from the list.
3. Move the cursor to the end of the list and enter your last name to this word list.
4. Enter your street and city names.

When done your screen will look something like this:



```
File: CUST.DICTIONARY         REVIEW/ADD/CHANGE            Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
WELCOME
TECHNOLOGY
RATHJE
WOODSIDE
EUGENE
```

## PART 4: DELETING A FILE FROM A DISK

The original CUST.DICTIONARY ASCII file stored on the disk is no longer needed. All future spell checking will be done using the new CUST.DICTIONARY file you are about to set up. In this part you will delete the existing ASCII file from the disk.

**NOTE**: To delete the CUST.DICTIONARY ASCII file from the DICTIONARY disk, begin by making sure the 5.25-inch AW PROGRAM disk is in Drive 1.

1. Begin at the Main Menu.
2. Select: 5. Other Activities.
3. Select: 4. Delete files from disk.
4. **5.25-inch** disk users, if requested, replace the DATA (actually the DICTIONARY) disk in Drive 1 ............................................................... press **RETURN**
5. From the DELETE FILES menu, select: CUST.DICTIONARY ...... press **RETURN**
6. Select "Yes," you really want to do this.

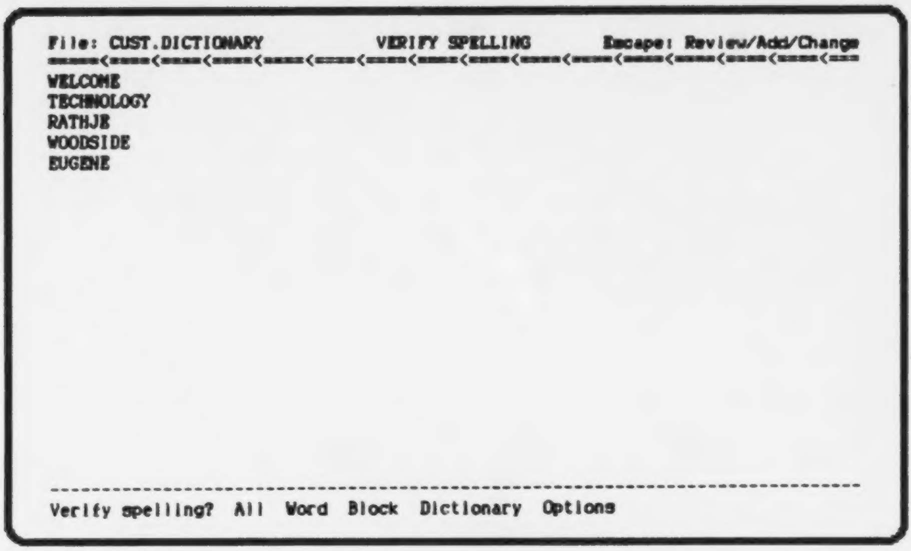
   The CUST.DICTIONARY ASCII file has been removed from the disk.
7. Use the Open-Apple Q command to quickly return to the CUST.DICTIONARY word processor file.

## PART 5: CREATING A NEW CUSTOM DICTIONARY

Now you will create a *new* Custom Dictionary file, and the fastest way to do this is by working with words *in a list*.

1. Press Open-Apple V.
2. For Verify spelling, select: Options.
3. For Spelling option, select: Method.
4. For Method, select: From a list.

Having changed the method from In context to From a list, *AppleWorks* returns you to the Verify Spelling menu.



```
File: CUST.DICTIONARY          VERIFY SPELLING       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
WELCOME
TECHNOLOGY
RATHJE
WOODSIDE
EUGENE

--------------------------------------------------------------------------------
Verify spelling? All  Word  Block  Dictionary  Options
```

5. If working with **5.25-inch disks**, replace your DATA (actually your DICTIONARY) disk in Drive 1.

   *Note: There will be no message instructing you to do this. If you do leave the AW PROGRAM disk in the drive you will receive an error message.*

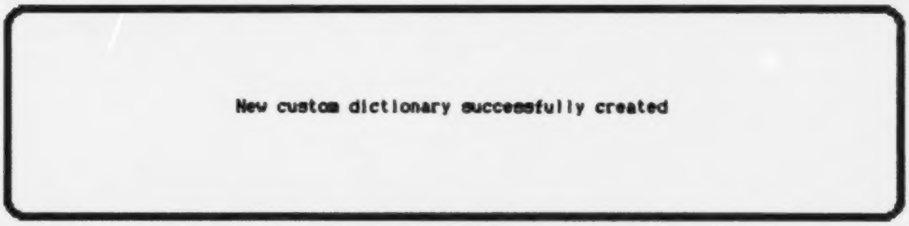
6. For Verify spelling, select: Dictionary.

7. For Custom Dictionary, select: Create new.

8. For new custom dictionary name, enter: CUST.DICTIONARY.
   Note: refer to the filename listed in the top left-hand corner of the screen for the correct spelling.

9. Press Return.

10. When saved on to the disk, *AppleWorks* will display the following message:



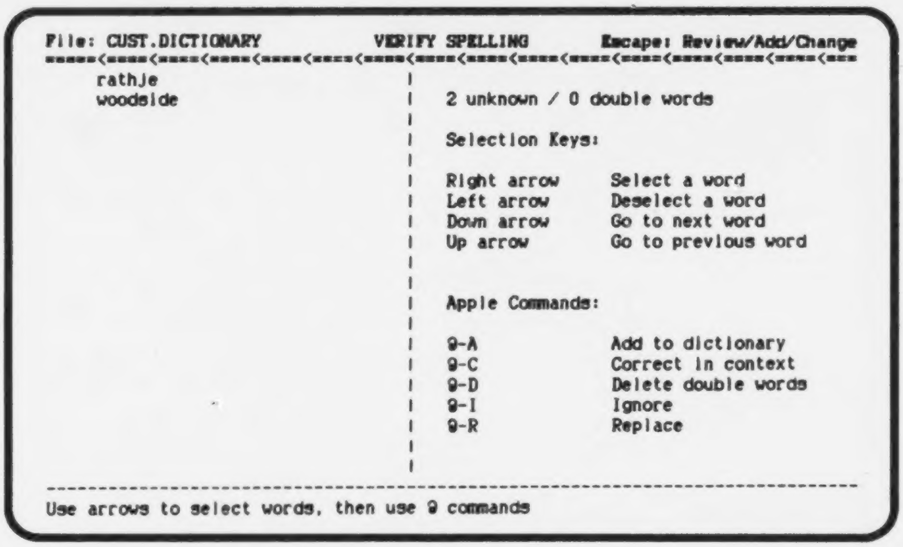
```
New custom dictionary successfully created
```

11. Press the Space Bar to return to the Verify Spelling menu.

The new Custom Dictionary you just set up is empty. You will next use the spelling checker to add all the words on the screen. In this way your new Custom Dictionary will contain the edited list of words.

12. For Verify spelling, select: All.

*AppleWorks* displays a list of unknown words (words you corrected or added) that are not already contained in the Main Dictionary. Depending upon how often you have used your *AppleWorks* spell checker, your word list will look *something* like this:



```
File: CUST.DICTIONARY            VERIFY SPELLING       Escape: Review/Add/Change
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
     rathje                         |
     woodside                       |   2 unknown / 0 double words
                                    |
                                    |   Selection Keys:
                                    |
                                    |   Right arrow     Select a word
                                    |   Left arrow      Deselect a word
                                    |   Down arrow      Go to next word
                                    |   Up arrow        Go to previous word
                                    |
                                    |
                                    |   Apple Commands:
                                    |
                                    |   9-A             Add to dictionary
                                    |   9-C             Correct in context
                                    |   9-D             Delete double words
                                    |   9-I             Ignore
                                    |   9-R             Replace
                                    |
                                    |
--------------------------------------------------------------------------------
Use arrows to select words, then use 9 commands
```

13. Add words on your screen to the Dictionary, using the Open-Apple A command.

When back on the Review/Add/Change screen, your new Custom Dictionary file will contain a list of words not found in the Main Dictionary.

## PART 6: REMOVING A FILE FROM THE DESKTOP

The CUST.DICTIONARY word processor file currently on the Desktop does not need to be saved, as the word list contained in this file has now been added to the new Custom Dictionary.

1. Escape to the Main Menu.
2. Select: 4. Remove files from the Desktop.
3. From the REMOVE FILES menu, select: CUST.DICTIONARY.
4. From the CUST.DICTIONARY menu, select: 3. Throw out the new file.
5. Select "Yes," you really want to do this. There is no reason to save it.

)

## PART 7: RESETTING THE CURRENT DISK DRIVE SETTING

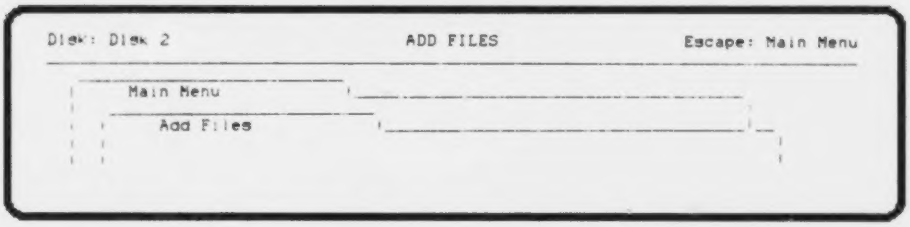
Before proceeding to the next set of activities, you need to reset *AppleWorks* so you have access to two disk drives.

1. Begin at the Main Menu.
2. Select: Add files to the Desktop.
3. For get files from, select: 2. A different disk.
4. For disk drives you can use, *Apple IIe users select: 2. Disk Drive 2.*

   *For Apple IIc users, select: 2. Ext. disk //C.*

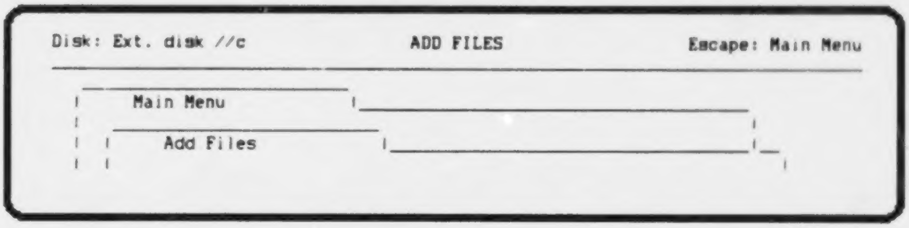
   *For Apple IIgs users, select 2. Disk 1 (Slot 6).*
5. Note the disk location indicator in the top left-hand corner of the ADD FILES screen.

**Apple IIe version)**



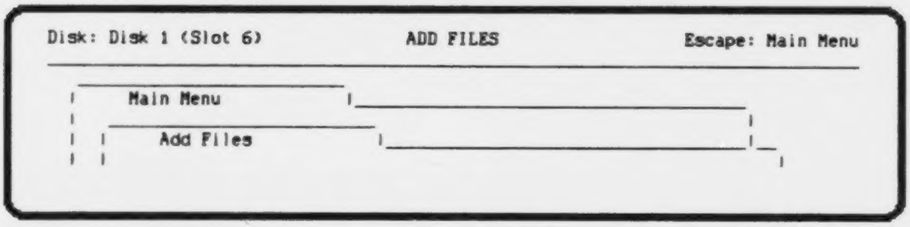
Disk: Disk 2 ADD FILES Escape: Main Menu

**(Apple IIc version)**



Disk: Ext. disk //c ADD FILES Escape: Main Menu

**(Apple IIGS version)**



Disk: Disk 1 (Slot 6) ADD FILES Escape: Main Menu

# ACTIVITY 5
# CHANGING THE SPELLING CHECKER SETTINGS

You have now worked with all of the Spelling Checker options available at the bottom of the various spelling checker menus. If you find you prefer a particular setting, e.g., having all "suspect" words appear each time in a list rather than in context, you can customize *AppleWorks* to always verify spellings according to your preference. To "preset" *AppleWorks* to your preferred settings you will work with the Other Activities menu. You examined a few of these settings in the Getting Started section of this book:

You can change three settings for the *AppleWorks* Spelling Checker:

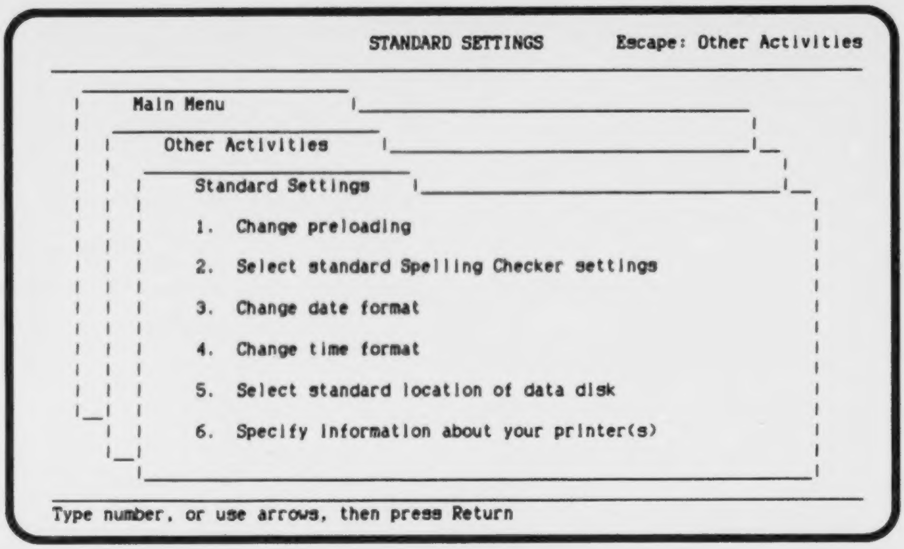
- You can select the Custom Dictionary you want to use as the *preset* (default) Custom Dictionary.
- You can select the preset spelling checker method: In context, or From a list.
- You can select how *AppleWorks* manages its spelling summary, or whether *AppleWorks* summarizes its spelling verification at all.

To set these defaults you will work with the Other Activities and Standard Settings menus.

## PART 1: THE STANDARD SETTINGS MENU

1. Begin at the Main Menu.
2. Select: 5. Other Activities .................................................. press **RETURN**
3. Select: 6. Select standard settings for AppleWorks...................... press **RETURN**

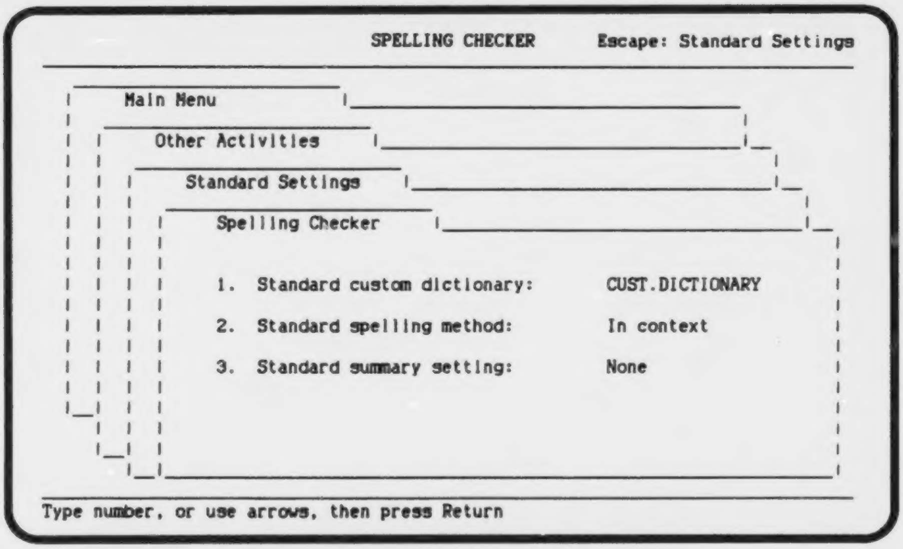
*AppleWorks* will display the Standard Settings menu:



```
                         STANDARD SETTINGS      Escape: Other Activities

     Main Menu
       Other Activities
         Standard Settings

           1.  Change preloading
           2.  Select standard Spelling Checker settings
           3.  Change date format
           4.  Change time format
           5.  Select standard location of data disk
           6.  Specify information about your printer(s)

Type number, or use arrows, then press Return
```

4. Select: 2. Select standard Spelling Checker settings..................... press **RETURN**

From the Spelling Checker menu you now have three menu selections:



```
                         SPELLING CHECKER      Escape: Standard Settings

     Main Menu
       Other Activities
         Standard Settings
           Spelling Checker

             1.  Standard custom dictionary:      CUST.DICTIONARY
             2.  Standard spelling method:        In context
             3.  Standard summary setting:        None

Type number, or use arrows, then press Return
```

## PART 2: SELECTING A CUSTOM DICTIONARY

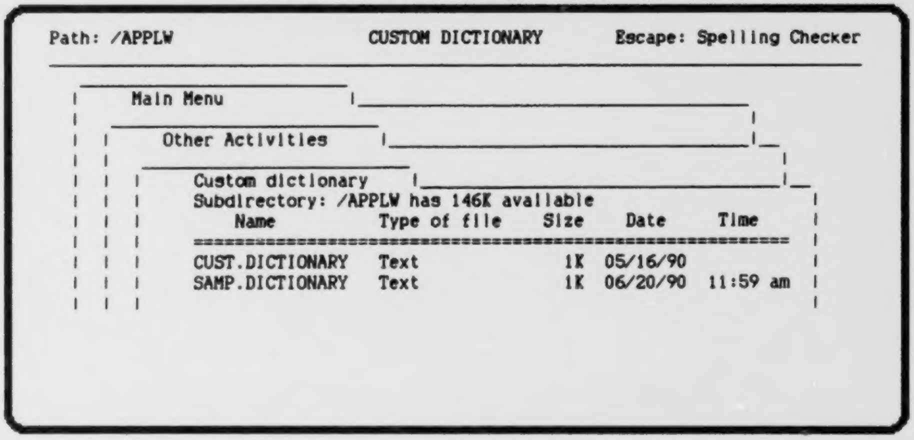
The first setting, Standard Custom Dictionary, allows you to identify the Custom Dictionary that *AppleWorks* will automatically use during verification. For activities in this book, we worked with one Custom Dictionary, CUST.DICTIONARY. You can, however, create other Custom Dictionaries, with different filenames, and save them also on the same disk. For example, you might decide to create a special dictionary containing technical terms. For certain documents you could save verification time if words were checked using this dictionary.

From the Spelling Checker menu you can select the Custom Dictionary *AppleWorks* will automatically use.

1. **5.25-inch disk** users, place the DICTIONARY disk in drive 1.
2. Select: 1. Standard custom dictionary....................................... press **RETURN**

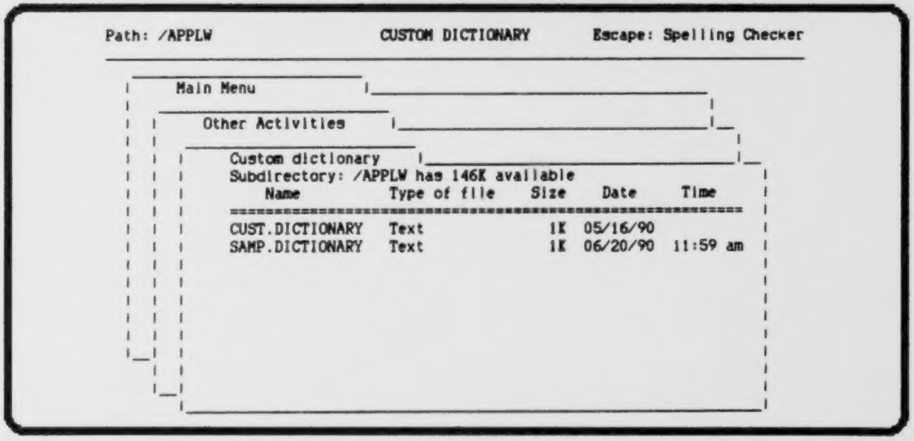
If you had created a new dictionary it woud be listed along with the Custom Dictionary file:

**(5.25-inch disk sample display)**



```
Path: /APPLW              CUSTOM DICTIONARY        Escape: Spelling Checker
-------------------------------------------------------------------------
  Main Menu
    Other Activities
      Custom dictionary
      Subdirectory: /APPLW has 146K available
          Name          Type of file    Size    Date      Time
      ============================================================
      CUST.DICTIONARY   Text             1K   05/16/90
      SAMP.DICTIONARY   Text             1K   06/20/90  11:59 am
```

**(3.5-inch disk sample display)**



```
Path: /APPLW              CUSTOM DICTIONARY        Escape: Spelling Checker
-------------------------------------------------------------------------
  Main Menu
    Other Activities
      Custom dictionary
      Subdirectory: /APPLW has 146K available
          Name          Type of file    Size    Date      Time
      ============================================================
      CUST.DICTIONARY   Text             1K   05/16/90
      SAMP.DICTIONARY   Text             1K   06/20/90  11:59 am
```

(Note: SAMP.DICTIONARY was created to illustrate this spell check option. Your screen will not contain this file.)

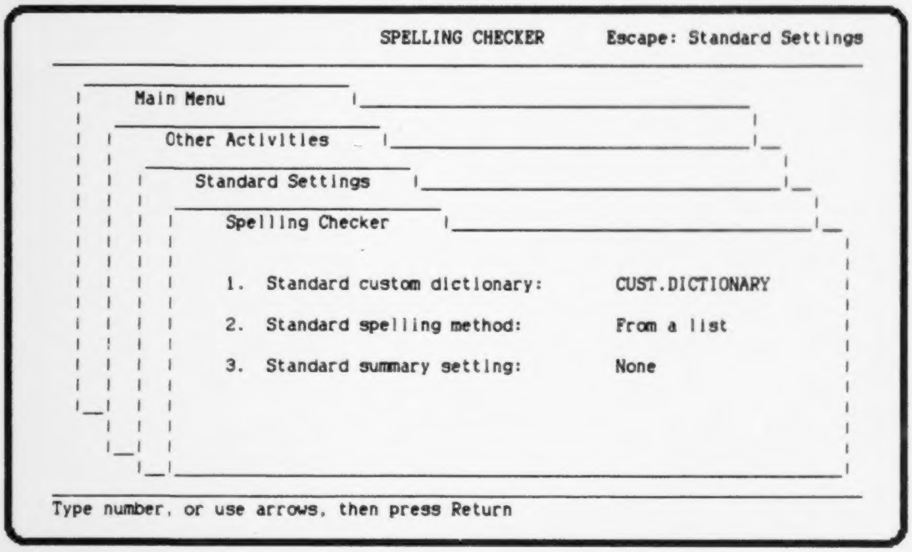
3. You should stay with the CUST.DICTIONARY file so highlight it and press Return.

## PART 3: SELECTING A SPELLING METHOD

The second setting, Standard Spelling Method, allows you to select between the In context and From a list verification methods. In Activity 2 you learned how to change the method from within the Options menu at the bottom of the Verify Spelling screen. Viewing "suspect" words in context is the preset method; however, you could set *AppleWorks* to **automatically** present words in the list format.

1. Select: 2. Standard spelling method ........................................ press **RETURN**
2. For change this setting, select: Yes ........................................ press **RETURN**

This setting has now switched to the second method:



```
                       SPELLING CHECKER      Escape: Standard Settings
 Main Menu
   Other Activities
     Standard Settings
       Spelling Checker

         1.  Standard custom dictionary:      CUST.DICTIONARY
         2.  Standard spelling method:        From a list
         3.  Standard summary setting:        None

Type number, or use arrows, then press Return
```

To switch back to the In context setting this process would be repeated.

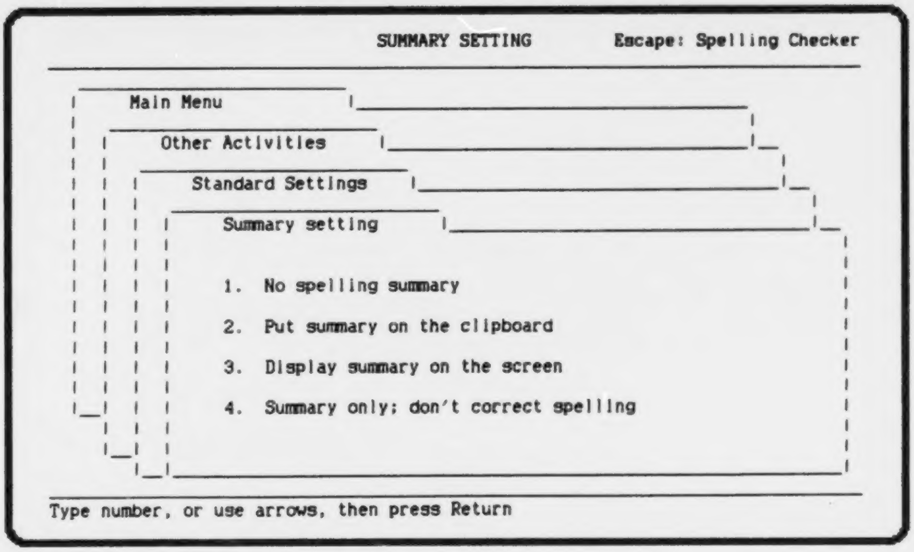
3. Change this option back to In context.

## PART 4: SELECTING A STANDARD SPELLING SUMMARY

The third setting, Standard Summary Setting allows you to select how you want *AppleWorks* to present the spelling summary.

1. This time select: 3. Standard summary setting ............................ press **RETURN**
2. For change this setting, select: Yes ........................................ press **RETURN**

The four summary options we examined in Activity 3 are listed:



```
                    SUMMARY SETTING       Escape: Spelling Checker

 Main Menu
   Other Activities
     Standard Settings
       Summary setting

         1.  No spelling summary

         2.  Put summary on the clipboard

         3.  Display summary on the screen

         4.  Summary only; don't correct spelling

Type number, or use arrows, then press Return
```

3. Select: 2. Put summary on the clipboard ................................ press **RETURN**

This setting has now switched to the second summary option.

To switch to another summary selection this process would be repeated.

4. Change this option back to No spelling summary.

5. Escape back to the Main Menu.

Now you are ready to examine either the Spreadsheet (Chapter 4), the Database (Chapter 5), or Mail Merge (Chapter 6) components.

# CHAPTER FOUR

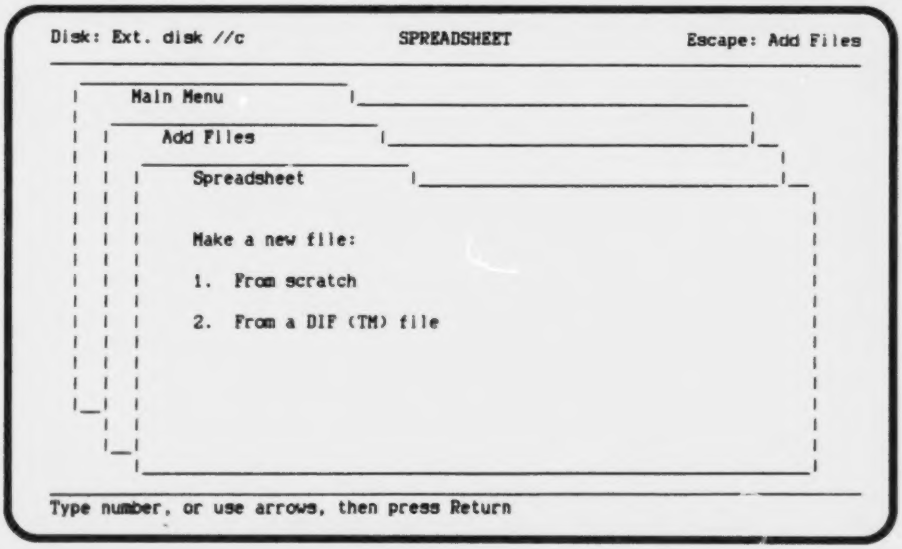
## THE SPREADSHEET

## ACTIVITY 1
## AN INTRODUCTION TO THE SPREADSHEET

### PART 1: CREATING A SPREADSHEET FROM SCRATCH

In this activity you will practice entering and changing information in a spreadsheet. The examples are simple and serve as opportunity for you to become acquainted with what a spreadsheet looks like and what a spreadsheet can do.

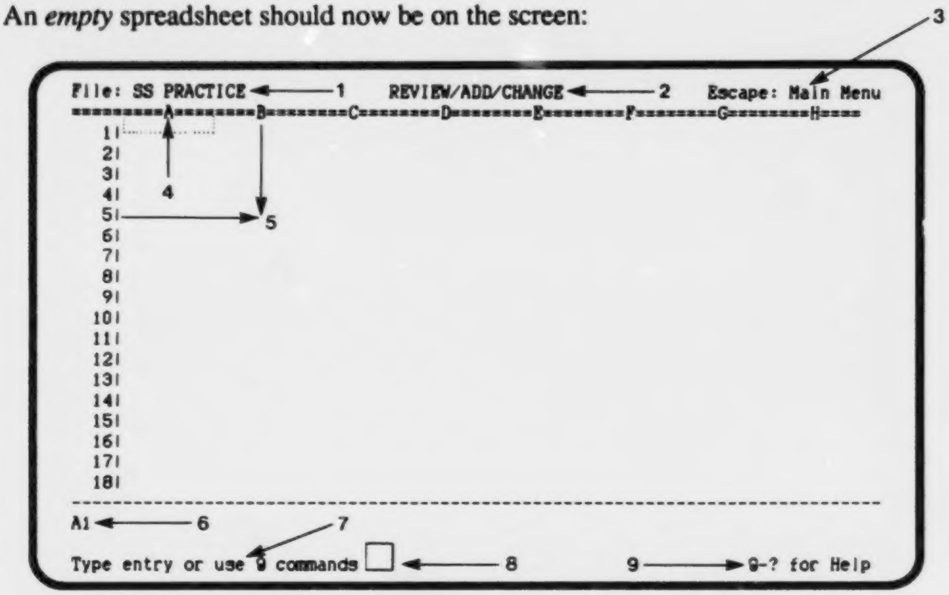
1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop........................................... press **RETURN**
3. Select: 5. Make a new file for Spreadsheet ................................ press **RETURN**
4. Select: 1. From scratch......................................................... press **RETURN**
5. Note the blinking cursor at the bottom of the screen.
6. For filename, type: SS PRACTICE ........................................ press **RETURN**



```
Disk: Ext. disk //c            SPREADSHEET            Escape: Add Files

Main Menu
  Add Files
    Spreadsheet

      Make a new file:

      1.  From scratch

      2.  From a DIF (TM) file

Type number, or use arrows, then press Return
```

7. Press Return.

8. An *empty* spreadsheet should now be on the screen:



```
File: SS PRACTICE                 REVIEW/ADD/CHANGE                Escape: Main Menu
=========A=========B=========C=========D=========E=========F=========G=========H====
    1|
    2|
    3|
    4|
    5|
    6|
    7|
    8|
    9|
   10|
   11|
   12|
   13|
   14|
   15|
   16|
   17|
   18|
------------------------------------------------------------------------------------
A1

Type entry or use  commands ☐                                        -? for Help
```

Note the following about the empty spreadsheet:

#1. The name of your spreadsheet file ("SS PRACTICE").

#2. The screen heading indicating a section of the *AppleWorks* program. On this screen you can review, add, or change information.

#3. This screen heading indicates which section of the program will be displayed if you press the Escape Key.

#4. The highlighted bar on the screen is the **spreadsheet cursor** and indicates your place within the spreadsheet grid. The Cursor is in column A, row 1—its position is referred to as *cell* A1.

#5. Rows and columns divide the spreadsheet into a grid pattern on the screen. **Columns** are identified by letters. **Rows** are identified by numbers.

#6. The **cell indicator** gives the cell number of the cursor's position. As you enter information for a cell it will first appear in the space *below* the cell indicator.

#7. The spreadsheet PROMPT. Instructions for working with the spreadsheet appear in this area.

#8. The **blinking cursor** indicates where labels, values, formulas or *AppleWorks* commands are entered. Your typing appears at this cursor.

#9. A reminder that pressing the Open-Apple and Question Mark keys will display a Help screen.

## PART 2: ENTERING SPREADSHEET INFORMATION

There are two main classifications of spreadsheet information:

*LABELS* are entries that usually begin with a letter. They are often used for column and row headings:

**NAME** **COST** **GRADE** **DATE**

*VALUES* are entries that include:

| **NUMBERS** | **FORMULAS** | **FUNCTIONS** |
|---|---|---|
| 136 | +A1*B1 | @SUM(A1 . . . A5) |
| $4000. | +E1+E2-E3 | @AVG(B1 . . . B10) |

1. Type the following names ...... in the cells indicated. If you make errors while entering the labels, use the Delete key to erase characters to the left of your cursor, then press Return. Use an Arrow key to move the cursor. Since each entry begins with a letter, the Cell Indicator will show these as **label** entries. Type:

| | | |
|---|---|---|
| LINDA | in cell A1 | press **RETURN** |
| PAT | in cell A18 | press **RETURN** |
| GINNY | in cell H18 | press **RETURN** |
| SARA | in cell H1 | press **RETURN** |

2. Type the following numbers in the cells indicated. Each entry begins with a number, so the Cell Indicator will show these as **value** entries.

| | | |
|---|---|---|
| 10 | in cell B1 (CAREFUL!! | press **RETURN** |
| 20 | in cell B2 Use the zero | press **RETURN** |
| 1050 | in cell B3 not the letter O!) | press **RETURN** |
| 10 | in cell C1 | press **RETURN** |
| 2 | in cell C2 | press **RETURN** |
| 10 | in cell C3 | press **RETURN** |

**NOTE**: To enter a *number as a label,* you must first press the Shift key *and* the Quotation Mark ( " ) symbol before typing the actual label. Then *AppleWorks* will treat whatever follows (e.g., a number or a blank space) as Label information.

3. Type:

   3RD PER ..................in cell A6 ........................................ press **RETURN**

4. Type the following **formulas** in the cells indicated. *Note that formulas beginning with cell coordinates must begin with the plus ( + ) or minus ( - ) sign, or a decimal point ( . ).* This distinguishes formulas from label entries.
   Note what appears in the cell when you press Return. Type:

   +B1+C1 ....................in cell E1 ........................................ press **RETURN**
   +B2+C2 ....................in cell E2 ........................................ press **RETURN**
   +B3+C3 ....................in cell E3 ........................................ press **RETURN**
   +B1+B2+B3...............in cell B7 ........................................ press **RETURN**
   +C1+C2+C3...............in cell C7 ........................................ press **RETURN**
   +E1+E2-E3................in cell E7 ........................................ press **RETURN**

5. *AppleWorks* uses the Slash ( / ) as the symbol for division and the Asterisk ( * ) for multiplication. Type:

   +B1+C1/E1 ................in cell H12 ...................................... press **RETURN**

## PART 3: UNDERSTANDING THE ESCAPE KEY

As you work with some of the basic *AppleWorks* features you will soon note that the Escape key can be used to cancel an Open-Apple command, or allow you to "change your mind" once you have begun to enter spreadsheet information.

Beginners can find themselves back at the Main Menu by pressing the Escape key one too many times. In this next part we will purposely escape back to the Main Menu and review how to get back to our work—without having to start over.

1. Move the cursor to cell H12, if not already there.

> **NOTE**: The upper right hand corner of the screen: "Escape: Main Menu." This screen heading always indicates which section of the program will be displayed if you press the Escape key.

2. Press the Escape key.
   You will now be back at the Main Menu. "Add Files to the Desktop" will be highlighted.

You already have a file in memory ("on the Desktop"), so you don't need to *add* another file to the Desktop. What you want to do is *work* with your SS PRACTICE spreadsheet.

3. Select: 2. Work with one of the files on the Desktop.

4. Press Return.

You should now be back at your spreadsheet . . . and the cursor will still be in cell H12. Don't worry, you won't lose your spreadsheet file by pressing the Escape key. To remove a file from memory requires several steps, that we covered in Chapter 1 and will cover again later in this chapter.

## PART 4: EDITING SPREADSHEET INFORMATION (Open-Apple B) (Open-Apple U) (Open-Apple D)

In Part 2 you pressed Return or an Arrow key to *confirm* an entry. Pressing Return confirms what you've typed, and keeps the cursor in the cell. Pressing an Arrow key confirms and moves the cursor.

If you change your mind—and have not yet confirmed the entry—you can press the Escape key to completely erase what has been typed. The word "Label:" or "Value:" will also be erased from the bottom of the screen.

There are several ways to make changes in a *completed* cell.

1. By entering new information directly into a cell:
    a. Move the spreadsheet cursor to cell A1.
    b. Change the name LINDA to LEAH by typing the new name at the bottom of the screen.
    c. Note that LEAH first appears in both cell A1 *and* at the bottom of the screen, and LINDA continues to appear on the cell indicator line.
    d. Press Return or an Arrow key. The label LEAH should now appear in cell A1 and on the cell indicator line.
2. By using the Open-Apple B command:
    a. Move the cursor to cell B1.
    b. Press Open-Apple B (to Blank Out).
    c. Select: Entry.
    Note: ***Entry*** means one cell.
    d. Press Return.
    All contents in cell B1 have now been erased.
    e. Next type the number 5000 at the bottom of the screen.
    f. Note that the number 5000 first appears at the bottom of the screen, but not in the cell.
    g. Press Return. The new number will now be in cell B1.

3. Or, by using the Open-Apple U command:

    a. Move the cursor to cell H1.

    b. Press Open-Apple U (to Undo).

    c. Note the insert cursor at the bottom of the screen.

    d. Use an Arrow key to move that cursor one space to the right of the word.

    e. Tap the Delete key to erase the letters A and R.

    f. Type MANTHA.

    g. Press Return. SAMANTHA should now be in cell H1.

    h. Move the cursor to cell C7 to change the formula.

    i. Press Open-Apple U.

    j. Use the Delete key and change the formula at the bottom of the screen to show: +C1+B2+C3. And press Return.

> **NOTE**: To undo whatever you have *just* typed and restore the original entry, press the Escape key.

4. There is one more way to edit spreadsheet information, but it involves more than one spreadsheet entry:

    a. Press Open-Apple D (to Delete).

    b. Note the choices at the bottom of the screen.

    c. Select: Columns ........................................................ press **RETURN**
    With this command you can remove cell contents for an entire column or an entire row, but not for a single cell.

    d. We will *not* delete any spreadsheet information this way, so press Escape.

## PART 5: CHANGING COLUMN WIDTHS (Open-Apple L)

Spreadsheet column widths are preset at nine characters. However, they can be increased or decreased.

1. Move the cursor to cell D9.
2. Press Open-Apple L (Layout).
3. Select: columns ............................................................ press **RETURN**
4. Press Return, again. We will only change column D's width.
5. Select: Column Width ........................................................ press **RETURN**
6. Hold down the Open-Apple key and tap the Left Arrow key until you have reduce this column to one (1) character.
7. Press Return.
8. Move the cursor to cell A9.
9. Press Open-Apple L.
10. Select: Columns............................................................ press **RETURN**
11. Press Return, again. We will only change column A's width.
12. Select: Column Width ........................................................ press **RETURN**
13. Use the Open-Apple and Right Arrow key to increase this column by four characters.
14. Press Return.
15. Type the name ANNA-MARIANA in cell A9............................ press **RETURN**

## PART 6: SAVING A SPREADSHEET FILE (Open-Apple S)

The spreadsheet information is in the memory of the computer. When the computer is turned off this file will be gone. If you want to have a copy of this spreadsheet file to work on later, you will need to save your work on your data disk.

We can save a file by Escaping to the Main Menu, or we can use the Open-Apple command. This time we will use the quick method.

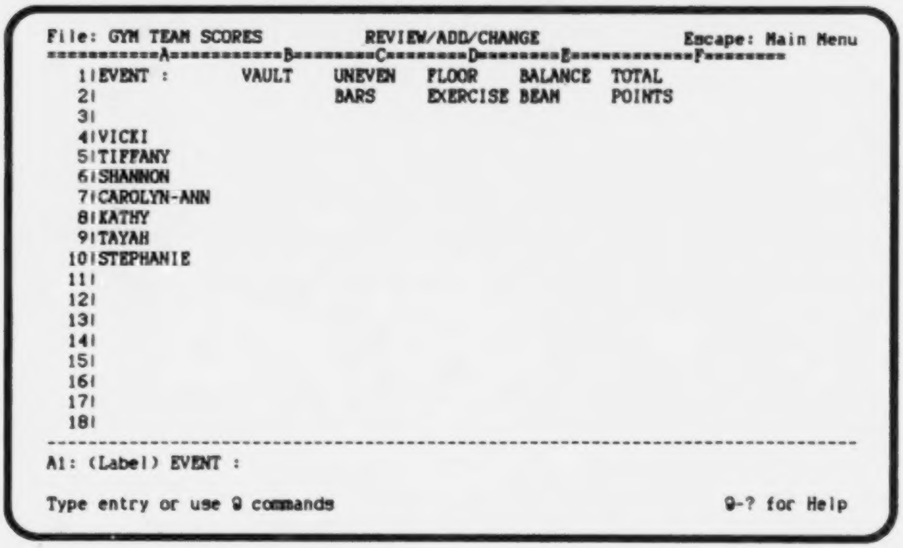
1. Press Open-Apple S (to Save).

When the disk-use light is off you will now have two copies of this spreadsheet, one in memory and one on the data disk.

# ACTIVITY 2
# BASIC SPREADSHEET FEATURES

## PART 1: ADDING A SPREADSHEET FILE TO THE DESKTOP

1. Press the Escape key and begin at the Main Menu.
2. Select: 1. Add Files to the Desktop........................................... press **RETURN**
3. Select: 1. From the Current Disk ............................................. press **RETURN**
4. Select: --> GYM TEAM SCORES ........................................... press **RETURN**
5. The following spreadsheet should now be on the screen:



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE            Escape: Main Menu
============A============B=========C=========D=========E=============F=========
    1|EVENT :        VAULT    UNEVEN   FLOOR    BALANCE  TOTAL
    2|                        BARS     EXERCISE BEAM     POINTS
    3|
    4|VICKI
    5|TIFFANY
    6|SHANNON
    7|CAROLYN-ANN
    8|KATHY
    9|TAYAH
   10|STEPHANIE
   11|
   12|
   13|
   14|
   15|
   16|
   17|
   18|
--------------------------------------------------------------------------------
A1: (Label) EVENT :

Type entry or use @ commands                                        @-? for Help
```

We will use a simple spreadsheet example to examine some of the basic spreadsheet features. Many of the commands and procedures that are introduced in this section will also apply when working with the *AppleWorks* database. As you work through this section, periodically *save your work* (Open-Apple S).

The names of the girls on a gymnastics team have already been entered in column A. Rows 1 and 2 contain the four event and total point headings.

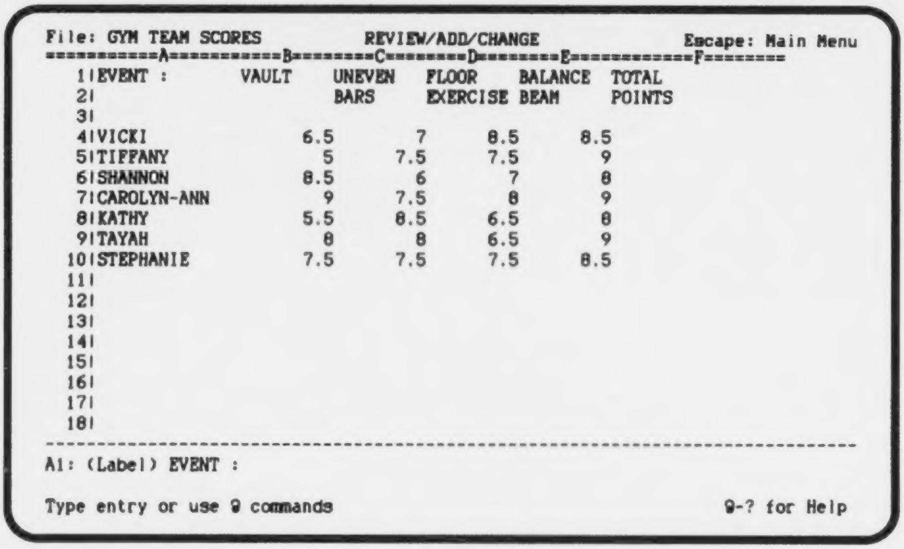
These entries begin with a letter and are treated as labels—they appear left-justified in the cell. For each cell containing one of these entries, the Cell Indicator at the bottom of the screen will show "LABEL:".

6. Move the spreadsheet cursor across row 1.

Note column widths have been changed for columns A and F.
The other columns (B through E) are displayed at the default (nine characters) setting.

## PART 2: ENTERING VALUES AND LABELS

1. Move the spreadsheet cursor to cell B4. Starting there, enter all the following team scores for the meet. Press the Return or an Arrow key to confirm. Headings and scores will not line up as they are entered. We will fix this later.



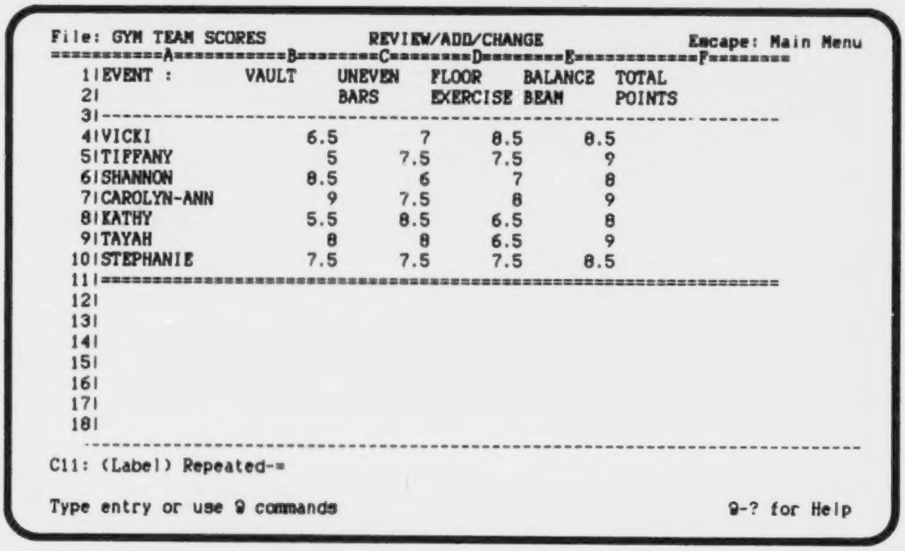
```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE               Escape: Main Menu
===========A===========B========C========D========E============F========
   1|EVENT :       VAULT    UNEVEN   FLOOR    BALANCE  TOTAL
   2|                       BARS     EXERCISE BEAM     POINTS
   3|
   4|VICKI               6.5        7      8.5      8.5
   5|TIFFANY               5      7.5      7.5        9
   6|SHANNON             8.5        6        7        8
   7|CAROLYN-ANN           9      7.5        8        9
   8|KATHY               5.5      8.5      6.5        8
   9|TAYAH                 8        8      6.5        9
  10|STEPHANIE           7.5      7.5      7.5      8.5
  11|
  12|
  13|
  14|
  15|
  16|
  17|
  18|
-------------------------------------------------------------------------------
A1: (Label) EVENT :

Type entry or use @ commands                                      @-? for Help
```

2. Move the cursor to cell A3. Hold down the Shift key and tap the Quotation Mark ( " ) key one time. Note the word LABEL: appearing under the Cell Indicator.

3. Type the Minus ( - ) sign across the screen, through column F.

4. Move the cursor to cell A11. Repeat steps 2 and 3, this time typing the Equal ( = ) sign through column F.

5. Move the cursor to cell C11 and note the information displayed at the Cell Indicator: C11: (Label) Repeated-=.



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE            Escape: Main Menu
============A============B=========C=========D=========E============F=========
   1|EVENT :         VAULT    UNEVEN   FLOOR    BALANCE  TOTAL
   2|                         BARS     EXERCISE BEAM     POINTS
   3|------------------------------------------------------------------
   4|VICKI             6.5        7      8.5      8.5
   5|TIFFANY             5      7.5      7.5        9
   6|SHANNON           8.5        6        7        8
   7|CAROLYN-ANN         9      7.5        8        9
   8|KATHY             5.5      8.5      6.5        8
   9|TAYAH               8        8      6.5        9
  10|STEPHANIE         7.5      7.5      7.5      8.5
  11|==================================================================
  12|
  13|
  14|
  15|
  16|
  17|
  18|
  ------------------------------------------------------------------------------
C11: (Label) Repeated-=

Type entry or use @ commands                                      @-? for Help
```

**NOTE**: If you later widen any column containing a repeated label entry, *AppleWorks* will automaticaly repeat the character enough times to fill out the column.

## PART 3: ENTERING AND COPYING FORMULAS (Open-Apple C)

The total points for each team member will be recorded in column F. We will first enter one formula, make sure it is correct, and then copy a *relative* version of this formula down column F.

1. Move the cursor to cell F4.
2. Type this formula: +B4+C4+D4+E4
3. Press Return. Check the addition.

> BEGINNERS TAKE NOTE: Routinely do hand calculations to make sure you are getting correct calculation results! Those numbers can look so nice and neat, but with logic, typing, or copying errors—they can be soooooo wrong.

4. Make sure the cursor is still in cell F4. It will be our *source* material for other formulas.
5. Press Open-Apple C.
   Note the word Copy at the top of the screen.
6. From the bottom of the screen, select: Within worksheet by ........... press **RETURN**
7. Note the instructions at the bottom of the screen.
8. For this copy, the **Source** is the formula in cell F4.
9. Cell F4 is already highlighted...so ........................................... press **RETURN**
10. Again, note the instructions at the bottom of the screen.
11. For this copy, the **New Location** will *begin* in cell F5.
12. Move the cursor to cell F5.
13. Type a period (*do not* include quotes!!) to indicate the beginning of the destination.
14. We want this formula in several cells, so *do not* press Return.
15. Now use the down arrow key to highlight column F from cell F5 through cell F10 (the end of the destination).
16. Press Return, and continue with Part 4 to complete the copy procedure.

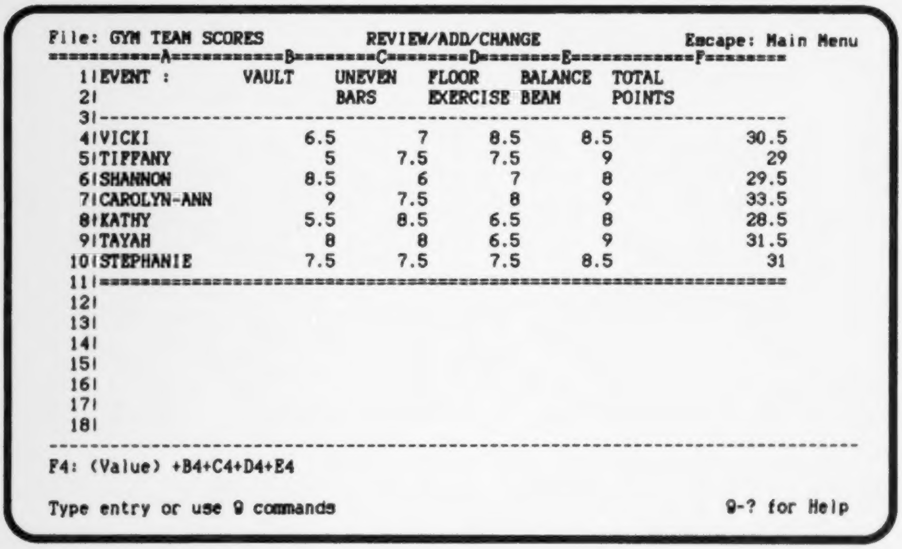
## PART 4: MAKING A RELATIVE COPY

We are not quite done . . . a series of questions will next appear at the bottom of the screen.

1. When asked how to copy the formula in cell B4: select **Relative.**

> With a **relative copy** the formula is "adjusted" to perform a similar calculation from row to row (or in other instances, column to column). While the values used are different in each row (or column), the *meaning* of the formula remains the same.

2. Press Return.
3. When asked to select in reference to C4: select **Relative.**
4. Press Return.
5. For D4 and E4: select **Relative**........................................... press **RETURN**
6. When you press the next Return, Column F should contain the calculation results for the formulas just copied.



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE               Escape: Main Menu
===========A============B========C========D========E============F========
   1|EVENT :        VAULT    UNEVEN   FLOOR    BALANCE  TOTAL
   2|                        BARS     EXERCISE BEAM     POINTS
   3|-------------------------------------------------------------------
   4|VICKI              6.5        7      8.5      8.5              30.5
   5|TIFFANY              5      7.5      7.5        9                29
   6|SHANNON            8.5        6        7        8              29.5
   7|CAROLYN-ANN          9      7.5        8        9              33.5
   8|KATHY              5.5      8.5      6.5        8              28.5
   9|TAYAH                8        8      6.5        9              31.5
  10|STEPHANIE          7.5      7.5      7.5      8.5                31
  11|===================================================================
  12|
  13|
  14|
  15|
  16|
  17|
  18|
--------------------------------------------------------------------------------
F4: (Value) +B4+C4+D4+E4

Type entry or use 9 commands                                        9-? for Help
```

7. Place the cursor on cell F5, Tiffany's total points.
8. The formula at the bottom of the screen should read:
   Value: +B5+C5+D5+E5
9. If your formula contains any variation, the copy from cell F4 was not done correctly, e.g., a **No Change** was probably entered.

10. If Tiffany's score contains any values other than her own, repeat the copy instructions on the previous page.

## PART 5: CHANGING THE VALUE LAYOUT SO DECIMAL POINTS LINE UP (Open-Apple L)

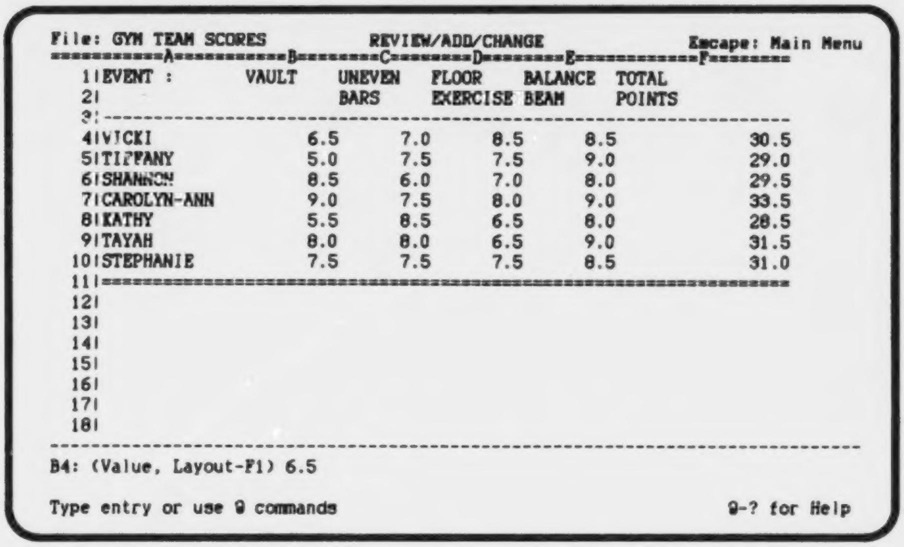
When entering values, no *trailing zeros* will be accepted. If we had entered Tiffany's vault score as 5.0, it would still appear on the screen as 5.

Values can be displayed different ways: with decimal points, commas, dollar or percent signs. These layout options are available with the Open-Apple L command.

How values are displayed can be adjusted using the Layout (Open-Apple L) command by Single Entry, Rows, Columns, or Blocks.

1. Place the cursor on cell B4 (6.5) and press Open-Apple L.
   Note the word LAYOUT at the top of the screen.
2. Select: Block ............................................................... press **RETURN**
3. Use the Right Arrow key to highlight B4 through F4.
4. Use the Down Arrow key to highlight through B10 to F10.
5. Press Return.
6. Select: Value format ....................................................... press **RETURN**
7. Select: Fixed.................................................................. press **RETURN**
8. For number of decimal places, type: 1 .................................... press **RETURN**

9. Your spreadsheet should now look like this:



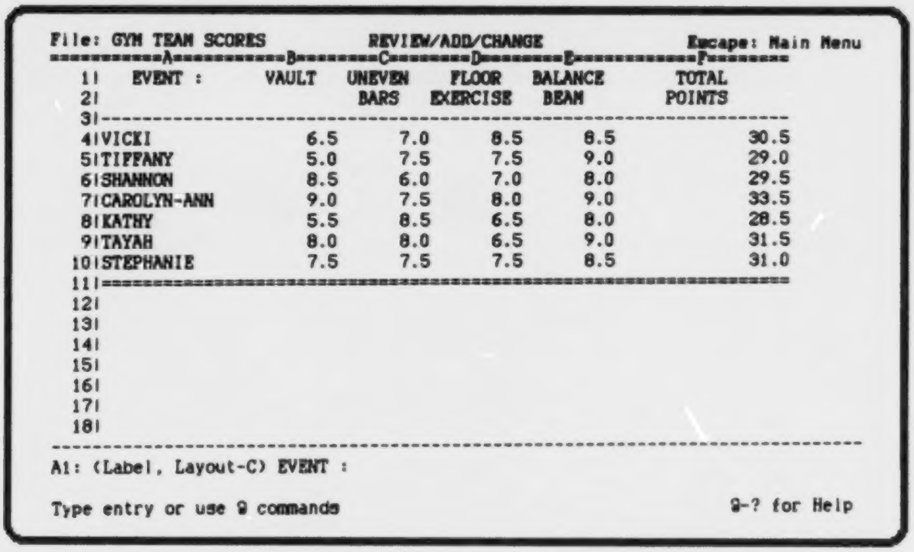
```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE               Escape: Main Menu
===========A===========B========C========D========E============F========
   1|EVENT :         VAULT    UNEVEN    FLOOR     BALANCE  TOTAL
   2|                         BARS      EXERCISE  BEAM     POINTS
   3|-------------------------------------------------------------------
   4|VICKI              6.5       7.0       8.5       8.5              30.5
   5|TIFFANY            5.0       7.5       7.5       9.0              29.0
   6|SHANNON            8.5       6.0       7.0       8.0              29.5
   7|CAROLYN-ANN        9.0       7.5       8.0       9.0              33.5
   8|KATHY              5.5       8.5       6.5       8.0              28.5
   9|TAYAH              8.0       8.0       6.5       9.0              31.5
  10|STEPHANIE          7.5       7.5       7.5       8.5              31.0
  11|===================================================================
  12|
  13|
  14|
  15|
  16|
  17|
  18|
--------------------------------------------------------------------------------
B4: (Value, Layout-F1) 6.5

Type entry or use 9 commands                                       9-? for Help
```

10. If you're interested in experimenting with this layout feature, repeat Part 5, selecting PERCENT or DOLLAR for different rows or columns. *Then reset your spreadsheet to the above example.*

## PART 6: CHANGING THE LABEL FORMAT TO CENTER COLUMN HEADINGS (Open-Apple L)

When you typed the team scores, the values appeared on the right side of the column. They appeared ***right justified*** by default. The default setting for labels is ***left justification***. We have just changed the format setting for values. Now we will change the setting for a block of labels.

1. Move the cursor to cell A1 (EVENT :).
2. Press Open-Apple L.
3. Select: Block ............................................................... press **RETURN**
4. Use the Arrow keys to highlight all the column headings above the dotted line (EVENT, TOTAL POINTS, etc.)............................ press **RETURN**
5. Select: Label format ........................................................ press **RETURN**
6. Select: Center................................................................. press **RETURN**
7. Your headings should now appear centered in each column:



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE            Escape: Main Menu
===========A===========B========C========D========E============F========
  1|   EVENT :      VAULT   UNEVEN    FLOOR   BALANCE       TOTAL
  2|                         BARS   EXERCISE   BEAM        POINTS
  3|-------------------------------------------------------------------
  4|VICKI               6.5     7.0      8.5      8.5              30.5
  5|TIFFANY             5.0     7.5      7.5      9.0              29.0
  6|SHANNON             8.5     6.0      7.0      8.0              29.5
  7|CAROLYN-ANN         9.0     7.5      8.0      9.0              33.5
  8|KATHY               5.5     8.5      6.5      8.0              28.5
  9|TAYAH               8.0     8.0      6.5      9.0              31.5
 10|STEPHANIE           7.5     7.5      7.5      8.5              31.0
 11|===================================================================
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------
A1: (Label, Layout-C) EVENT :

Type entry or use 9 commands                                  9-? for Help
```

8. The heading in column F, TOTAL POINTS, looks unbalanced in relation to the values in that column, try this:

9. Move the cursor to cell F1.

10. Press Open-Apple L.

11. Select: Columns................................................................ press **RETURN**

12. Press Return to confirm column F.

13. Select: Label format............................................................ press **RETURN**

14. Select: Right justify............................................................ press **RETURN**

> **NOTE**: You can select options from the bottom of the screen by using an arrow key to highlight and then pressing Return. You can also select by typing the first letter of the option you want, e.g., R for Row. The program will then move to the next set of options or questions.

15. Now right justify column B, C, D, and E labels. Column A labels can remain as they are.

## PART 7: ARRANGING SPREADSHEET ROWS (Open-Apple A)

*AppleWorks* lets you rearrange rows in a spreadsheet. With this feature you can examine the same information in different ways.

For example, once information has been entered, it can be arranged alphabetically (e.g., by last names) or sorted numerically (e.g., showing highest to lowest scores). We will also see this very useful feature when we work with the *AppleWorks* database.

### To Arrange Team Members In Alphabetical Order:

1. Move the cursor to cell A4 ( VICKI ).
   We will rearrange the spreadsheet based upon information in this *column.*

2. Press Open-Apple A (to Arrange).
   Row 4 will now be highlighted.

**NOTE**: In order to leave certain rows unaffected by a sort, you ***must*** indicate the *beginning* and *end* of the area you want to arrange.

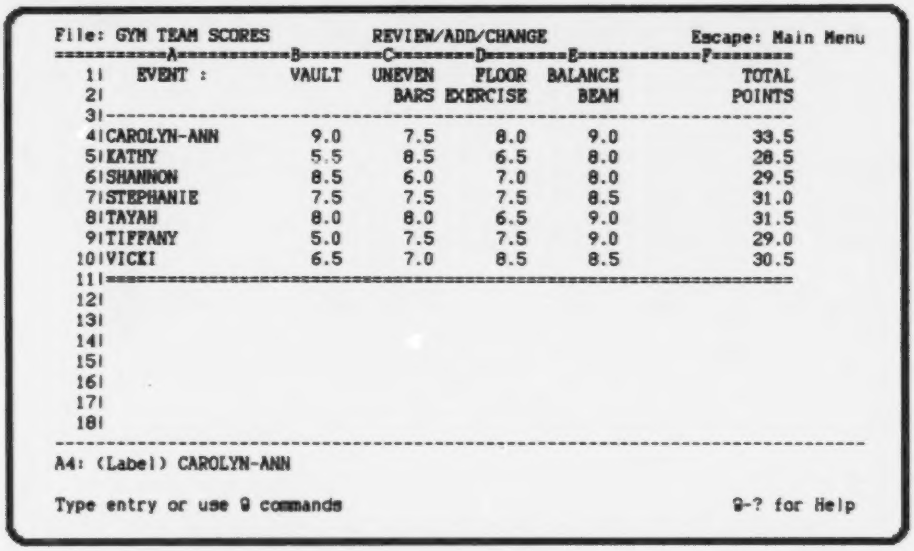
3. Use the cursor to further highlight rows 5 through 10.
   (The information in unhighlighted rows will not be rearranged.)

4. Press Return.

5. The screen will next display:
   Rows 4 through 10 will be arranged based on the contents of column A.

6. For arrangement order, select: Labels from A to Z. ...................... press **RETURN**

7. Your spreadsheet should now be arranged like this:



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE              Escape: Main Menu
============A============B=========C=========D=========E=============F=========
    1|   EVENT :           VAULT   UNEVEN     FLOOR  BALANCE            TOTAL
    2|                              BARS  EXERCISE     BEAM            POINTS
    3|-------------------------------------------------------------------------
    4|CAROLYN-ANN            9.0       7.5       8.0      9.0             33.5
    5|KATHY                  5.5       8.5       6.5      8.0             28.5
    6|SHANNON                8.5       6.0       7.0      8.0             29.5
    7|STEPHANIE              7.5       7.5       7.5      8.5             31.0
    8|TAYAH                  8.0       8.0       6.5      9.0             31.5
    9|TIFFANY                5.0       7.5       7.5      9.0             29.0
   10|VICKI                  6.5       7.0       8.5      8.5             30.5
   11|=========================================================================
   12|
   13|
   14|
   15|
   16|
   17|
   18|
--------------------------------------------------------------------------------
A4: (Label) CAROLYN-ANN

Type entry or use @ commands                                       @-? for Help
```

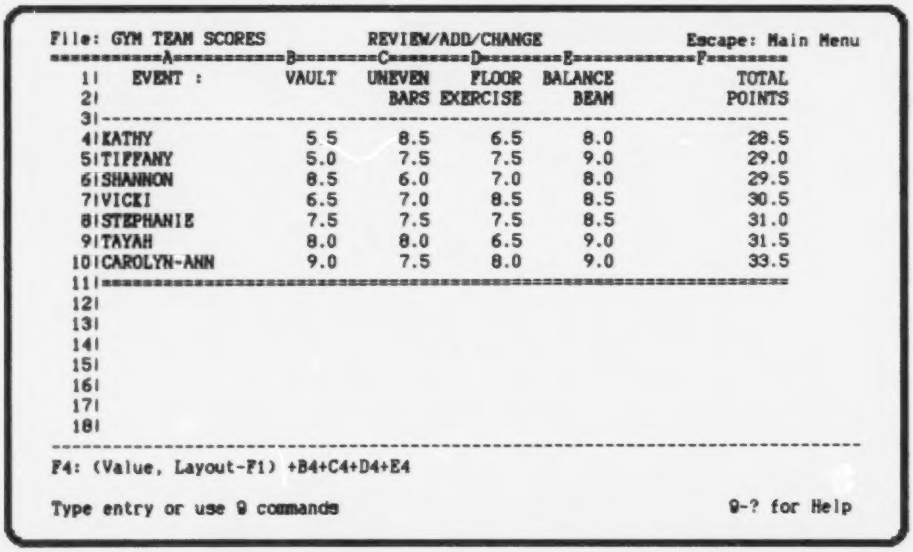
### To Arrange the Team According To Total Points:

1. Move the cursor to cell F4 (33.5).

2. Press Open-Apple A.

3. Highlight rows 4 through 10.............................................. press **RETURN**

4. Select: Values from 0 to 9 ................................................ press **RETURN**

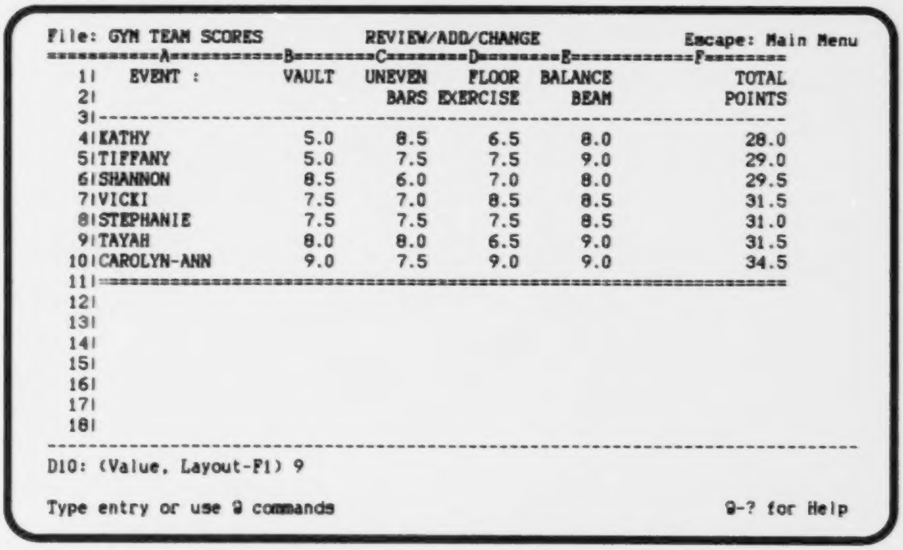


```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE              Escape: Main Menu
============A============B=========C=========D=========E=============F=========
    1|   EVENT :           VAULT   UNEVEN     FLOOR  BALANCE            TOTAL
    2|                              BARS  EXERCISE     BEAM            POINTS
    3|-------------------------------------------------------------------------
    4|KATHY                  5.5       8.5       6.5      8.0             28.5
    5|TIFFANY                5.0       7.5       7.5      9.0             29.0
    6|SHANNON                8.5       6.0       7.0      8.0             29.5
    7|VICKI                  6.5       7.0       8.5      8.5             30.5
    8|STEPHANIE              7.5       7.5       7.5      8.5             31.0
    9|TAYAH                  8.0       8.0       6.5      9.0             31.5
   10|CAROLYN-ANN            9.0       7.5       8.0      9.0             33.5
   11|=========================================================================
   12|
   13|
   14|
   15|
   16|
   17|
   18|
--------------------------------------------------------------------------------
F4: (Value, Layout-F1) +B4+C4+D4+E4

Type entry or use @ commands                                       @-? for Help
```

## PART 8: EDITING SPREADSHEET INFORMATION

Making changes in a spreadsheet is very simple. Just position the cursor on a cell and type new information. If that cell has been ***named*** in any formulas—anywhere in the spreadsheet—the formula will be recalculated. Try these:

1. Move the cursor to cell B4 (5.5).
2. Change Kathy's vault score to 5.0 by typing a 5.
3. Watch cell F4 as you press Return. The change to 28.0 will be fast!
4. Move the cursor to cell B7 (6.5).
5. Change Vicki's vault score to 7.5.
6. As you press Return, again watch column F.
7. Change Carolyn-Ann's floor exercise score to 9.
8. The spreadsheet should contain the following scores in column F:



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE               Escape: Main Menu
===========A===========B========C========D========E============F========
  1|   EVENT :           VAULT   UNEVEN    FLOOR  BALANCE          TOTAL
  2|                              BARS  EXERCISE     BEAM         POINTS
  3|--------------------------------------------------------------------
  4|KATHY                  5.0      8.5      6.5      8.0           28.0
  5|TIFFANY                5.0      7.5      7.5      9.0           29.0
  6|SHANNON                8.5      6.0      7.0      8.0           29.5
  7|VICKI                  7.5      7.0      8.5      8.5           31.5
  8|STEPHANIE              7.5      7.5      7.5      8.5           31.0
  9|TAYAH                  8.0      8.0      6.5      9.0           31.5
 10|CAROLYN-ANN            9.0      7.5      9.0      9.0           34.5
 11|====================================================================
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
D10: (Value, Layout-F1) 9

Type entry or use @ commands                                       @-? for Help
```

## PART 9: PROTECTING ONE OR MORE CELLS (Open-Apple L)

The information on a spreadsheet can be changed easily. You can protect cells so entries can not be inadvertently changed by you or someone else.

We will use the Open-Apple L command to **protect** the scores on this gymnastic spreadsheet.

1. Move the cursor to cell B4 (5.0).
2. Press Open-Apple L.
3. Select: Block.
4. Move the cursor to highlight all scores ...................................... press **RETURN**
5. Select: Protection.
6. For protection allow?, select: Nothing.
7. Now try typing over any of the scores.
8. Try the Open-Apple B command to blank a protected entry and note the screen message.
9. When asked to override cell protection, select: NO.
10. Place the cursor on cell B1 (VAULT). Note the bottom of the screen.

> The cell indicator shows:
>
> B1: ( Label, Layout-R ) VAULT
>
> The cell indicator shows that cell B1 contains the word "VAULT:" a ***label*** entry that has been set for a ***right justification*** layout.

11. Place the cursor on cell B4 (5.0).

> The cell indicator shows:
>
> B4: ( Value, Layout-F1 , Protected-N ) 5
>
> For this cell, the entry is a ***value*** that has been given a ***fixed*** layout of ***one decimal place*** and has been set with ***protection*** which will allow for ***nothing***.

To turn this feature off:

12. Have the cursor again on cell B4.
13. Press Open-Apple L.
14. Select: Block.

15. Move the cursor to highlight all scores ..................................... press **RETURN**

16. Select: Protection.

17. For protection, select: Anything.

18. At the cell indicator note cell B4 (Value, Layout F-1) is no longer protected.

## PART 10: GETTING A QUICK PRINTOUT OF SCREEN INFORMATION (Open-Apple H)

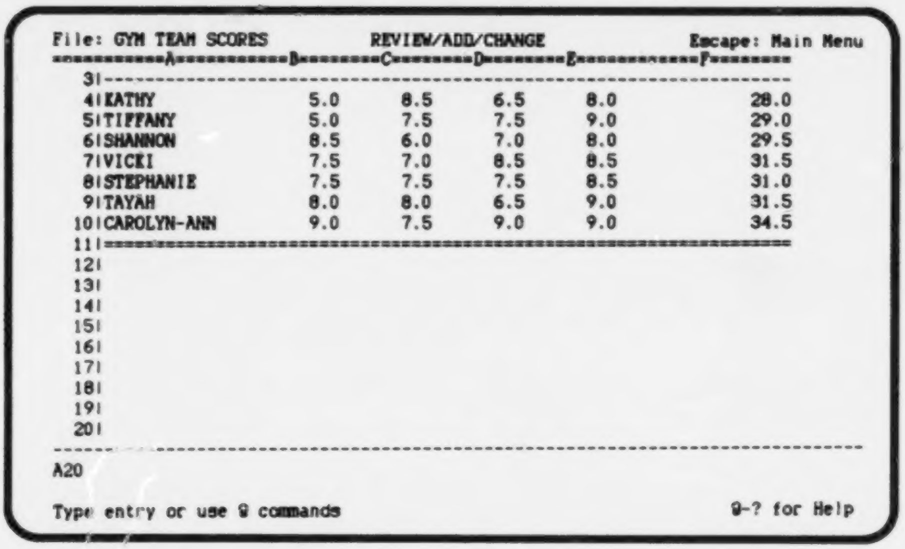
> *AppleWorks* provides a quick way to print what you see on the screen (a screen dump), with the Open-Apple H (for Hardcopy) command. The gym team spreadsheet examples in this workbook were created using this feature.
>
> With Open-Apple H, *everything* on the screen is printed, including status line information. For more finished reports you would use the Open-Apple P (for Print) command.

If your computer is connected to a printer, try the following. If not, take time to see what a neighbor is printing.

1. Have the section of the spreadsheet you want printed on the screen.
2. The cursor can be on any cell.
3. Turn on the printer, adjust the paper, and set the SELECT button.
4. Press Open-Apple H.

The printout should contain all information displayed on the screen.

5. Move the cursor to the blank cell A20.
6. Print using the Open-Apple H command.
   This time rows 1 and 2 were not printed, because they are not on the screen.



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE              Escape: Main Menu
===========A===========B========C========D========E============F========
    3|------------------------------------------------------------------
    4|KATHY              5.0      8.5      6.5      8.0            28.0
    5|TIFFANY            5.0      7.5      7.5      9.0            29.0
    6|SHANNON            8.5      6.0      7.0      8.0            29.5
    7|VICKI              7.5      7.0      8.5      8.5            31.5
    8|STEPHANIE          7.5      7.5      7.5      8.5            31.0
    9|TAYAH              8.0      8.0      6.5      9.0            31.5
   10|CAROLYN-ANN        9.0      7.5      9.0      9.0            34.5
   11|==================================================================
   12|
   13|
   14|
   15|
   16|
   17|
   18|
   19|
   20|
--------------------------------------------------------------------------------
A20

Type entry or use @ commands                                        @-? for Help
```

7. Move the cursor back to cell A1.

## PART 11: USING SPREADSHEET FUNCTIONS TO WRITE FORMULAS

A coach might be interested in knowing the average vault score for a meet.

The formula for such a calculation would be:

+B4+B5+B6+B7+B8+B9+B10/7

Not much of a time-saver this way (and plenty of opportunity for typos). With a spreadsheet we can write formulas that contain ***code*** words. These codes, or **functions**, are mini-computer programs that perform common or complex calculations. We use these "shorthand" codes to write formulas in simple terms. The *AppleWorks* program applies the appropriate operations.

Functions are written as abbreviations :

@SUM is the code that stands for "add up the values in the following list of cells."

**@SUM(F3.F24)**

@AVG is the code for "add up the values in the following list of cells and calculate the average."

**@AVG(D3.D10)**

@MAX is the code that stands for "find the largest value from the following list."

**@MAX(A3,B3,C1,D6)**

@MIN is the code used to find the smallest value.

**@MIN(A3,B3,C1,D6)**

**NOTE**: **Functions** must start with an ***at*** sign, ( @ ) to indicate that what follows is a value, ***not*** a label.

The period ( . ) indicates you want a ***range*** of cells; a comma ( , ) indicates you want a ***list*** of cells.

A formula that uses a ***function*** must end with a right parenthesis symbol ( ) ).

In cell B13, you will type the formula that says "add all the vault scores and calculate the average."

1. Enter: @AVG(B3.B11).
2. When you press Return, the average is calculated.
3. That's a *lot* of decimal places. To change the layout:
    a. Press Open-Apple L.
    b. Select: Entry.
    c. Select: Value format.
    d. Select: Fixed.
    e. Enter: 1 decimal place.................................................. press **RETURN**
4. In cell B14: type this formula: @MAX(B3.B11)........................ press **RETURN**
   You now have the HIGHEST vault score.
5. In cell B15: type this formula: @MIN(B3.B11).......................... press **RETURN**
   You now have the LOWEST vault score.
6. In cell A13: type AVERAGE
   In cell A14: type HIGH
   In cell A15: type LOW

We now have the average, high, and low VAULT scores for the meet. Next we will use the copy feature to duplicate the AVG, MAX, and MIN formulas for other columns in this spreadsheet.

1. Move the cursor to cell B13 (7.2).
2. Press Open-Apple C.
3. Select: Within Worksheet.

4. To highlight the **source**, use the Down Arrow key to highlight cell B14 (9) and cell B15 (5) ............................................... press **RETURN**

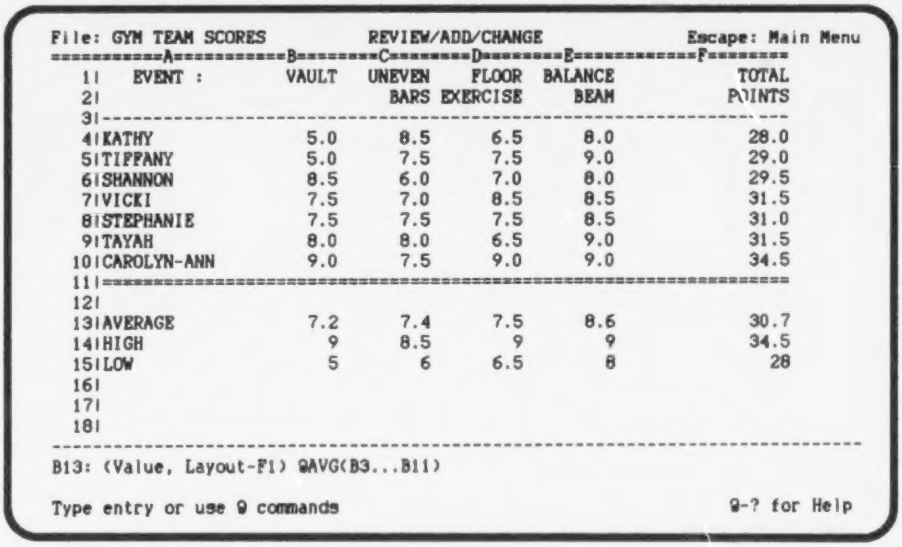
5. To identify the beginning of the **destination**, use the Right Arrow key to highlight cell C13.

6. Type a Period.

7. Use the Right Arrow key to highlight columns D, E, and F (the ending destination). ....................................................... press **RETURN**

8. For all the questions that next appear at the bottom of the screen, select: Relative

9. Your spreadsheet should now look like this:



```
File: GYM TEAM SCORES          REVIEW/ADD/CHANGE           Escape: Main Menu
===========A===========B========C========D========E============F========
  1|   EVENT :       VAULT   UNEVEN    FLOOR  BALANCE          TOTAL
  2|                           BARS EXERCISE     BEAM         POINTS
  3|---------------------------------------------------------------
  4|KATHY              5.0      8.5      6.5      8.0           28.0
  5|TIFFANY            5.0      7.5      7.5      9.0           29.0
  6|SHANNON            8.5      6.0      7.0      8.0           29.5
  7|VICKI              7.5      7.0      8.5      8.5           31.5
  8|STEPHANIE          7.5      7.5      7.5      8.5           31.0
  9|TAYAH              8.0      8.0      6.5      9.0           31.5
 10|CAROLYN-ANN        9.0      7.5      9.0      9.0           34.5
 11|===============================================================
 12|
 13|AVERAGE            7.2      7.4      7.5      8.6           30.7
 14|HIGH                 9      8.5        9        9           34.5
 15|LOW                  5        6      6.5        8             28
 16|
 17|
 18|
-------------------------------------------------------------------------
B13: (Value, Layout-F1) @AVG(B3...B11)

Type entry or use @ commands                                 @-? for Help
```

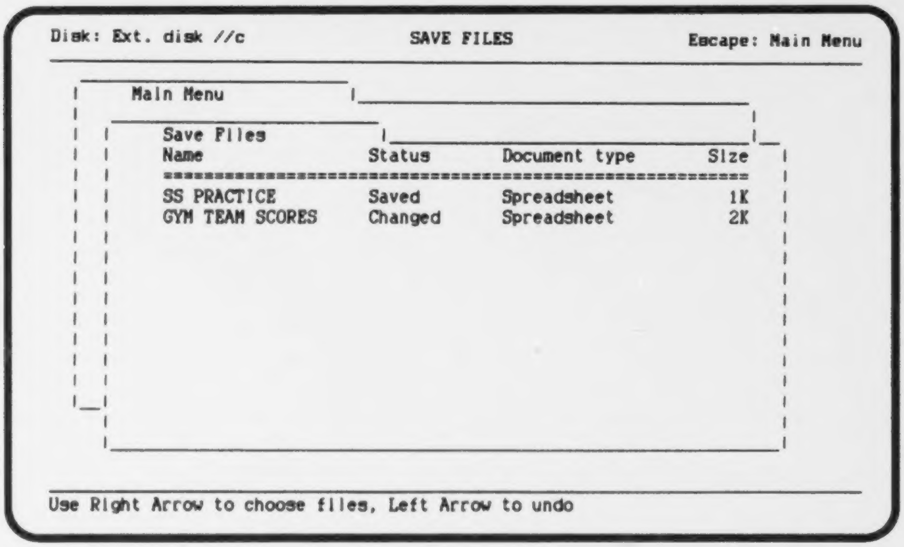
**DID YOU NOTICE?** When you made a copy of cell B13, the fixed, one decimal layout was also copied into cells C13, D13, E13, and F13.

10. How would you fix this ***block*** of numbers, so that all decimal points lined up? . . . Go ahead.

## PART 12: SAVING SEVERAL SPREADSHEET FILES

You have been periodically saving your updated spreadsheet file with the Open-Apple S command ....right ? *AppleWorks* also allows you to save your work from the Main Menu. The Save routine from this menu allows you to save several files at once. Since you can have more than one file on the Desktop (in memory), saving from the Main Menu lets you select the file(s) you want to save.

1. Press the Escape key to return to the Main Menu.
2. Select: 3. Save Desktop files to disk.
3. Your screen should now show the Save File Menu:



```
Disk: Ext. disk //c              SAVE FILES              Escape: Main Menu
---------------------------------------------------------------------------
 Main Menu
   Save Files
   Name               Status      Document type        Size
   =========================================================
   SS PRACTICE        Saved       Spreadsheet           1K
   GYM TEAM SCORES    Changed     Spreadsheet           2K

---------------------------------------------------------------------------
Use Right Arrow to choose files, Left Arrow to undo
```

4. Note the top of the screen indicates: Save Files.

With this Save routine, additional information for each file is provided:

- FILE NAME
- STATUS
- DOCUMENT TYPE
- FILE SIZE

5. Note the instructions at the bottom of the screen.
6. Mark the SS PRACTICE filename by typing the Right Arrow key.
7. Press the Down Arrow key to move to the next filename.
8. Mark GYM TEAM SCORES ................................................ press **RETURN**
9. Select: 1. Save the file on the current disk.

10. Select: 1. Let the new information replace the old.

> What is currently saved ***on the disk*** under the filename GYM TEAM SCORES is about to be replaced with whatever is ***in memory*** under that same filename.
>
> If you *do not* press the Escape key, the Save routine will be completed. If you do press Escape, the Save routine will be cancelled.

11. Repeat the save routine for the SS PRACTICE file. This time tap the Escape key to stop the process, and note the screen message *"Because you pressed Escape the file was not saved."*
12. Press the Space Bar to return to the Save File Menu.
13. Press Open-Apple Q, to quickly select a file to work with.
14. Select: GYM TEAM SCORES

## PART 13: REMOVING A FILE FROM THE DESKTOP

*AppleWorks* allows up to 12 files on the Desktop at one time. This will vary, of course, with the total amount of Desktop memory you have available and the size of each file. Once you are through working with a file you can use a Main Menu option to remove it from the Desktop. We will go through this process by removing your SS PRACTICE file.

1. Press the Escape key to return to the Main Menu.
2. Select: 4. Remove files from the Desktop. ................................ press **RETURN**
3. Mark the SS PRACTICE filename by typing the Right Arrow key.
4. Press Return.
5. If SS PRACTICE *was* saved in Part 12 it will have been removed from the Desktop after you pressed Return. You will now be back at the Main Menu. Select: 2. Work with one of the files on the Desktop and return to your GYM TEAM SCORES file.

> **NOTE**: *AppleWorks* keeps track if you've changed your file since saving it last. Any new keystrokes will mark a file as *changed.* If you print the file, *AppleWorks* also considers this as a change.

6. If SS PRACTICE *was not* saved in Part 12, you will need to select what you want to do with a *changed* file: save it on the Current Disk; save it on a different disk; or, throw it out and not save this version of the file.
7. Select: 1. Save the file on the Current Disk.
8. Press Return. SS PRACTICE is no longer on the Desktop.
9. Select: 2. Work with one of the files on the Desktop and return to your GYM TEAM SCORES file.

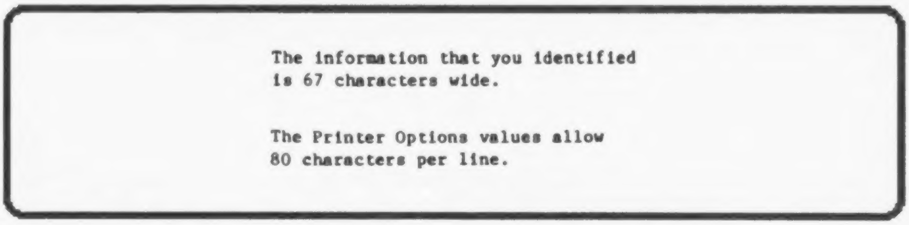
## PART 14: PRINTING A SPREADSHEET REPORT (Open-Apple P)

When printing a spreadsheet report:

- Use the Open-Apple P command.
- If the report fits on an 8-inch wide sheet of paper, print it.
- If it won't all fit, use the Open-Apple O command (for Print Options) to reduce the Characters per Inch setting, e.g., print with elite type (12) rather than pica (10).
- If the spreadsheet still will not fit, you will have to print it out in *blocks.*

Even if you are not connected to a printer, go through the following print routine. *AppleWorks* will return you to your spreadsheet.

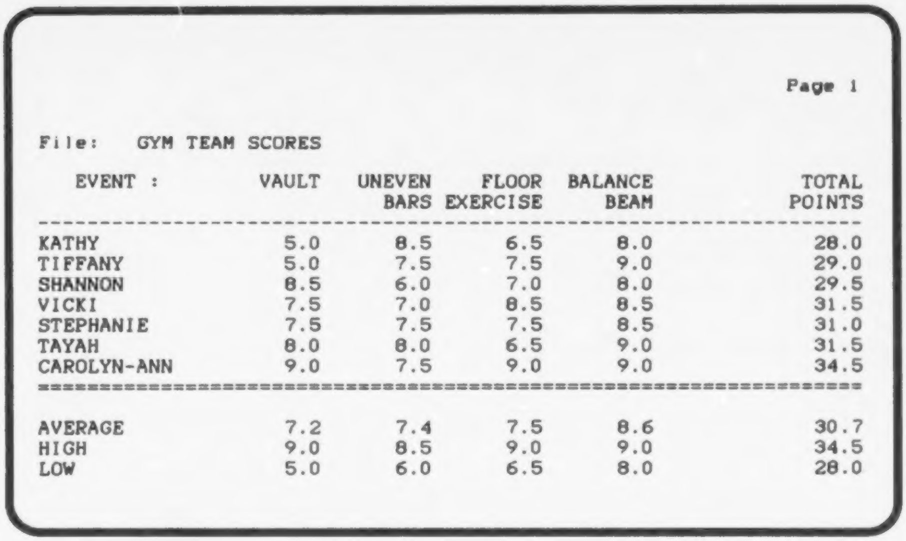
1. Move the cursor to cell A1.
2. Press Open-Apple P.
3. For Print? select: All (might as well try this first).
4. Note the message on the screen:



```
The information that you identified
is 67 characters wide.

The Printer Options values allow
80 characters per line.
```

Great! Our spreadsheet example will fit without having to make any further Printer Option adjustments.

5. For "where do you want to print the report?" select: the name of your printer.
6. Type today's date.
7. If you are connected to a printer, turn on both the ON/OFF and ON LINE lights.
8. For how many copies? type: 1
9. When you press Return the spreadsheet report will be printed. Note that the report contains heading information such as filename, page number, and date (if entered):



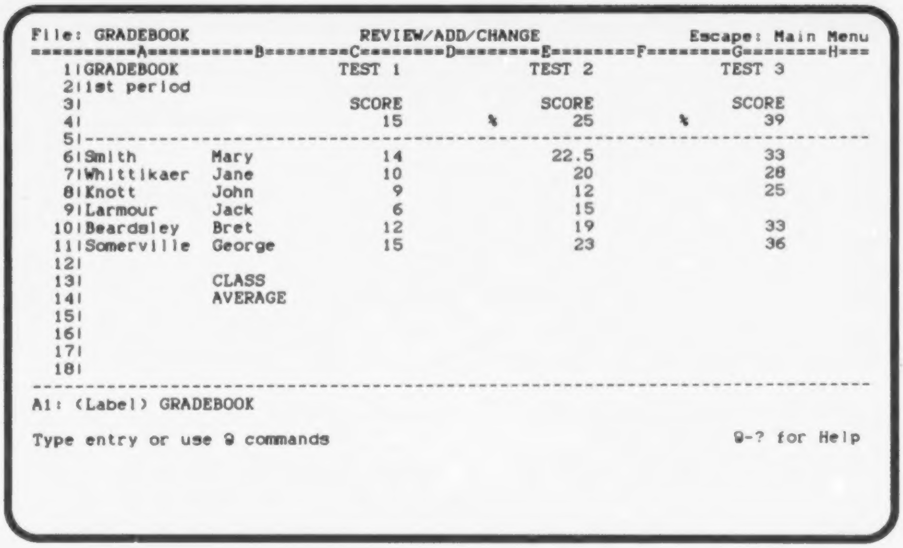
```
                                                            Page 1

File:   GYM TEAM SCORES
   EVENT :          VAULT    UNEVEN     FLOOR  BALANCE             TOTAL
                               BARS  EXERCISE     BEAM            POINTS
--------------------------------------------------------------------------
KATHY                 5.0       8.5       6.5      8.0              28.0
TIFFANY               5.0       7.5       7.5      9.0              29.0
SHANNON               8.5       6.0       7.0      8.0              29.5
VICKI                 7.5       7.0       8.5      8.5              31.5
STEPHANIE             7.5       7.5       7.5      8.5              31.0
TAYAH                 8.0       8.0       6.5      9.0              31.5
CAROLYN-ANN           9.0       7.5       9.0      9.0              34.5
==========================================================================

AVERAGE               7.2       7.4       7.5      8.6              30.7
HIGH                  9.0       8.5       9.0      9.0              34.5
LOW                   5.0       6.0       6.5      8.0              28.0
```

# ACTIVITY 3
# USING A SPREADSHEET FOR GRADES

In this activity you will work with a spreadsheet file that has been set up to record and calculate student grades.

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop ........................................ press **RETURN**
3. Select: 1. Get Files from the Current Disk ............................... press **RETURN**
4. Select: --> GRADEBOOK ................................................... press **RETURN**

Cells C4, E4, and G4 contain the TOTAL POINTS POSSIBLE for each test. Since Jack did not take the third test, cell G9 is blank.



```
File: GRADEBOOK                REVIEW/ADD/CHANGE             Escape: Main Menu
==========A==========B========C========D========E========F========G========H===
  1|GRADEBOOK                 TEST 1            TEST 2            TEST 3
  2|1st period
  3|                           SCORE             SCORE             SCORE
  4|                              15        %       25        %       39
  5|----------------------------------------------------------------------------
  6|Smith       Mary             14             22.5                33
  7|Whittikaer  Jane             10               20                28
  8|Knott       John              9               12                25
  9|Larmour     Jack              6               15
 10|Beardsley   Bret             12               19                33
 11|Somerville  George           15               23                36
 12|
 13|            CLASS
 14|            AVERAGE
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
A1: (Label) GRADEBOOK

Type entry or use 9 commands                                        9-? for Help
```

## PART 1: ENTERING FORMULAS

Once raw scores have been entered, we can calculate a student's Percentage Score by dividing points earned by the points possible.

For TEST 1 there were 15 points possible; Mary's score was 14.

To calculate the percentage score we would write:

14/15

Using the cells that contain those numbers we would enter:

+C6/C4

1. Enter the above formula in cell D6........................................ press **RETURN**
   .9333333 should be displayed.
2. Enter the formula +E6/E4 in cell F6.
   This formula will calculate Mary's percentage score for TEST 2.
3. Enter +G6/G4 for TEST 3, in cell H6.

## PART 2: ENTERING SPREADSHEET FUNCTIONS

Next we will use a spreadsheet function to calculate the class AVERAGE for each test.

Using the AVG function, we will enter the formula that calculates the average student scores for cells D6 through D11.

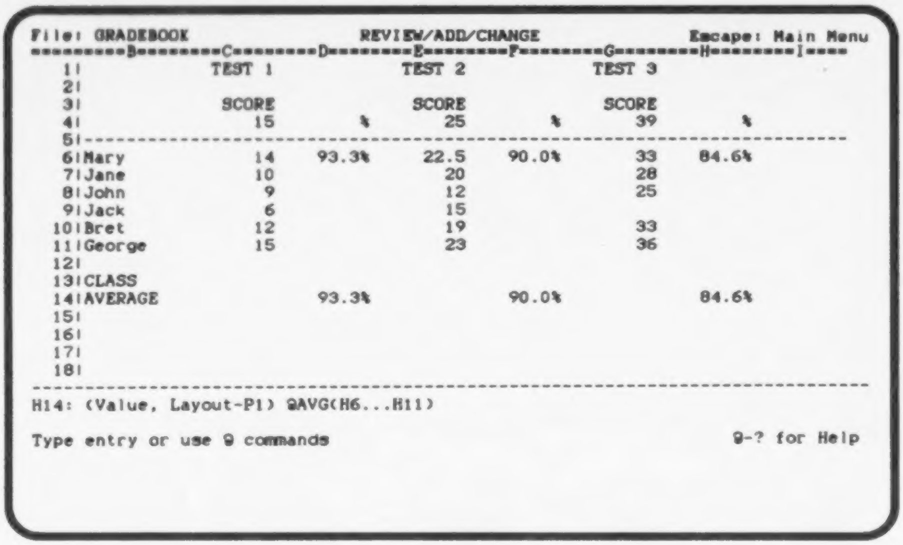
1. In cell D14 enter @AVG(D6.D11). ........................................ press **RETURN**
   .9333333 should be displayed. Why this number?

> **NOTE**: When entering a range of cells into a function, type one period. The program will insert three periods within the parenthesis: @AVG(D6...D11).

2. In cell F14 enter @AVG(F6.F11)
   This will calculate the class average for TEST 2.
3. For TEST 3 enter @AVG(H6.H11) in cell H14.
4. Use the Open-Apple L command so values in columns D, F, and H are displayed in the *percent* format with one decimal place.

> **NOTE**: The Open-Apple L (Layout) process will have to be done three times, one column at a time. Columns E and G are *not* to be displayed as *percents*.

5. Your rows 6 and 14 should agree with the following example:



```
File: GRADEBOOK             REVIEW/ADD/CHANGE            Escape: Main Menu
=========B=========C=========D=========E=========F=========G=========H=========I====
  1|                 TEST 1                  TEST 2                  TEST 3
  2|
  3|                  SCORE                   SCORE                   SCORE
  4|                     15        %             25        %             39        %
  5|------------------------------------------------------------------------------
  6|Mary                 14    93.3%           22.5    90.0%             33    84.6%
  7|Jane                 10                      20                      28
  8|John                  9                      12                      25
  9|Jack                  6                      15
 10|Bret                 12                      19                      33
 11|George               15                      23                      36
 12|
 13|CLASS
 14|AVERAGE                    93.3%                   90.0%                   84.6%
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
H14: (Value, Layout-P1) @AVG(H6...H11)

Type entry or use @ commands                                      @-? for Help
```

## PART 3: COPYING FORMULAS (Open-Apple C)

Mary's scores have been calculated. Now for the other students.

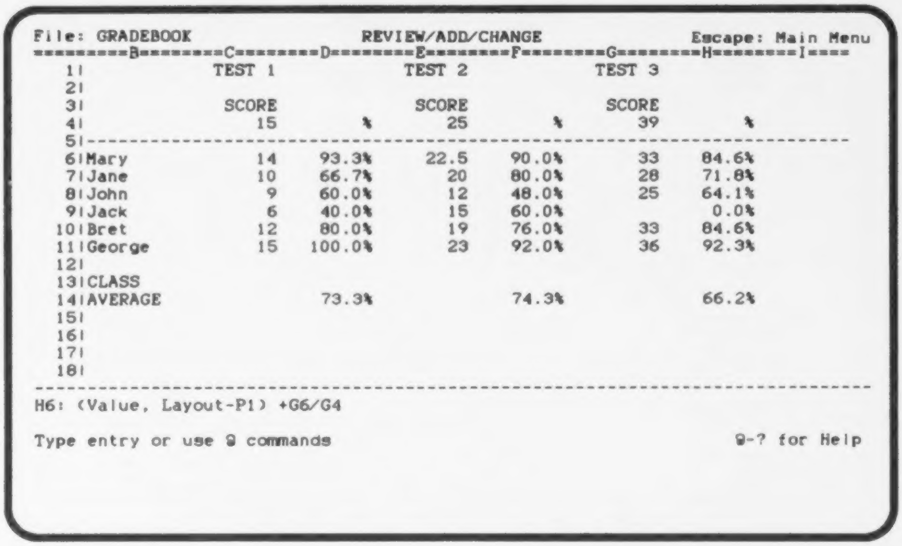
1. Use Open Apple-C to copy the formula in cell D6 *into* cells D7 *through* D11.
   a. Begin with the cursor on cell D6 (93.3%).
   b. Press Open-Apple C and select: Within worksheet.
   c. The cursor is already on the source, so press Return.
   d. Move the cursor to cell D7.
   e. This is the beginning of the destination, so type a period.
   f. Use the cursor to highlight through cell D11.
   g. This is the *end* of the destination, so press Return.
2. When asked to select in reference to C6: select **Relative**.
3. When asked to select in reference to C4: select **No Change**.

Each student score is to be divided by 15, the value in C4. Since we want an exact copy of this value in each cell, **No Change** is selected.

4. Copy the formula in cell F6 *into* cells F7 *through* F11.
   The value in cell E6 will be a **Relative** copy; E4 (25) will be **No Change**.
5. Repeat this process one more time, in column H.

Did you notice that the Class Average function also recalculated the totals as more student test scores were calculated?

6. Your spreadsheet should look like this:



```
File: GRADEBOOK              REVIEW/ADD/CHANGE            Escape: Main Menu
=========B=========C=========D=========E=========F=========G=========H=========I====
  1|                     TEST 1            TEST 2            TEST 3
  2|
  3|                      SCORE             SCORE             SCORE
  4|                         15        %       25        %       39        %
  5|------------------------------------------------------------------------
  6|Mary                     14    93.3%     22.5    90.0%       33    84.6%
  7|Jane                     10    66.7%       20    80.0%       28    71.8%
  8|John                      9    60.0%       12    48.0%       25    64.1%
  9|Jack                      6    40.0%       15    60.0%              0.0%
 10|Bret                     12    80.0%       19    76.0%       33    84.6%
 11|George                   15   100.0%       23    92.0%       36    92.3%
 12|
 13|CLASS
 14|AVERAGE                        73.3%             74.3%             66.2%
 15|
 16|
 17|
 18|
----------------------------------------------------------------------------
H6: (Value, Layout-P1) +G6/G4

Type entry or use @ commands                                     @-? for Help
```

## PART 4: INSERTING ROWS OR COLUMNS (Open-Apple I)

Next we will add two more students to this gradebook. *AppleWorks* provides an insert feature with the Open-Apple I command. More information can be added at the beginning, end, or in the middle of existing entries.

1. Move the cursor to cell A8.
2. Press Open-Apple I (to Insert).
3. Select: Rows ................................................................ press **RETURN**
4. For number of rows to insert, type: 2....................................... press **RETURN**

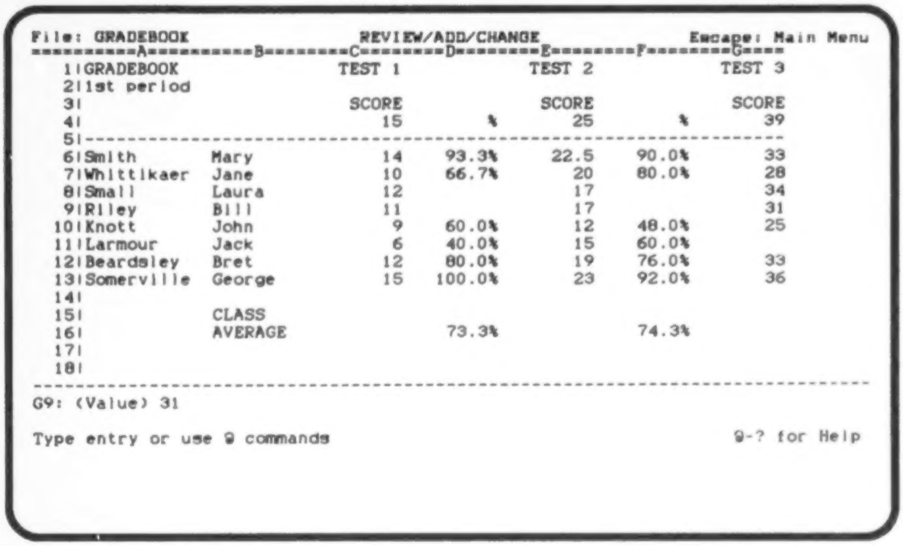
A *wedge* of rows has now been inserted for two more student entries. Information for John, Jack, Bret, and George has been *relocated* two rows down. Class Average information is now on rows 15 and 16.

We can insert rows any place in the spreadsheet, except row 999.

We can also insert columns using Open-Apple I.

We can delete rows and columns with Open-Apple D. This is how you would permanently remove an entry (e.g., a student who has left).

5. Add the new information listed below on rows 8 and 9.



```
File: GRADEBOOK               REVIEW/ADD/CHANGE             Escape: Main Menu
==========A===========B=========C=========D=========E=========F=========G====
   1|GRADEBOOK                  TEST 1              TEST 2              TEST 3
   2|1st period
   3|                            SCORE               SCORE               SCORE
   4|                               15         %        25         %        39
   5|-------------------------------------------------------------------------
   6|Smith       Mary               14     93.3%      22.5     90.0%        33
   7|Whittikaer  Jane               10     66.7%        20     80.0%        28
   8|Small       Laura              12                  17                  34
   9|Riley       Bill               11                  17                  31
  10|Knott       John                9     60.0%        12     48.0%        25
  11|Larmour     Jack                6     40.0%        15     60.0%
  12|Beardsley   Bret               12     80.0%        19     76.0%        33
  13|Somerville  George             15    100.0%        23     92.0%        36
  14|
  15|            CLASS
  16|            AVERAGE                   73.3%                74.3%
  17|
  18|
--------------------------------------------------------------------------------
G9: (Value) 31

Type entry or use 9 commands                                      9-? for Help
```

## PART 5 : COPYING FORMULAS (Open-Apple C)

We have added two students and their test results. Next we need to calculate their percentage scores.
But what about the students who were relocated on different rows? What has happened to their formulas once two rows were inserted? And, what about the Class Average: the function was written to calculate only rows 6 through 11?

1. Move the cursor to cell D10.

2. Note what appears at the cell indicator, at the bottom of the screen :

**D10: (Value, Layout-P1) +C10/C4**

3. Move the cursor down through cell D13.
   Note how the formulas are displayed at the bottom of the screen.

> When rows are inserted in a spreadsheet, *AppleWorks* automatically renumbers all rows below the insertion. If you add columns, it reletters columns to the right.
>
> *AppleWorks* also reworks formulas that refer to these renumbered rows (or relettered columns). The formulas are adjusted and continue to refer to the cells originally intended.
>
> ***Functions*** that refer to the affected rows or columns will also be adjusted. Calculations will include entries in the new cells.

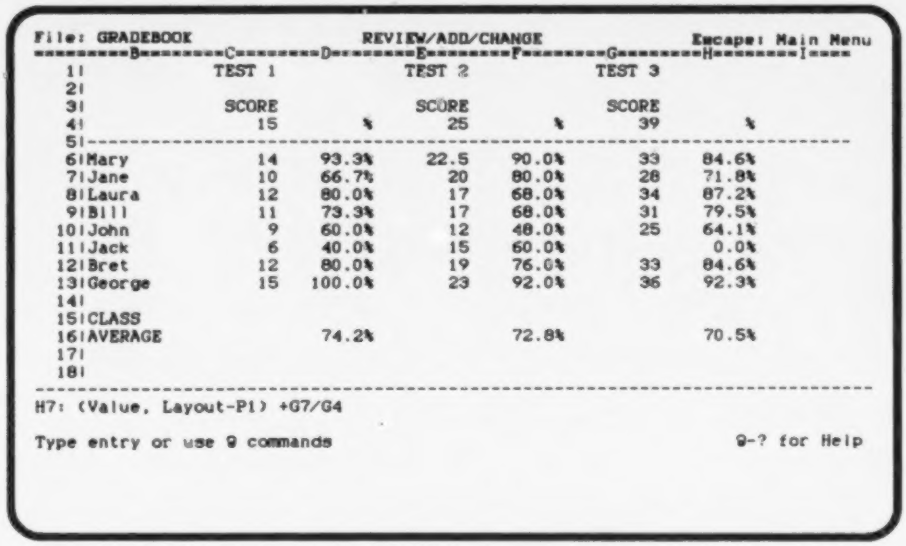
4. Move the cursor to cell D16.

5. Note what is indicated at the cell indicator:

   **D16 (Value, Layout-P1) @AVG (D6...D13)**

It appears that the formulas and functions we originally wrote have been "adjusted" and are still accurate. We need percentage score formulas for the two new students:

6. Move the cursor to source, cell D7.
   a. Press Open-Apple C (to Copy).
   b. Select: Within worksheet ............................................... press **RETURN**
   c. With the cursor on cell D7 press Return—that will be the **source**.
   d. Move the cursor to cell D8—that will be our **new location**.
   e. Press the Period to begin the copy routine in this cell.
   f. Use the Down Arrow key to highlight cell D9........................ press **RETURN**
   g. Select **Relative** for the first reference.
   h. Select **No Change** for the second reference.
7. Repeat the copy routine in columns F and H.
8. Your spreadsheet should now look like the one below.
9. Save your work.



```
File: GRADEBOOK                REVIEW/ADD/CHANGE               Escape: Main Menu
=========B========C========D========E========F========G========H========I====
  1|              TEST 1             TEST 2             TEST 3
  2|
  3|               SCORE              SCORE              SCORE
  4|                  15        %        25        %        39        %
  5|-------------------------------------------------------------------------
  6|Mary              14    93.3%      22.5    90.0%        33    84.6%
  7|Jane              10    66.7%        20    80.0%        28    71.8%
  8|Laura             12    80.0%        17    68.0%        34    87.2%
  9|Bill              11    73.3%        17    68.0%        31    79.5%
 10|John               9    60.0%        12    48.0%        25    64.1%
 11|Jack               6    40.0%        15    60.0%               0.0%
 12|Bret              12    80.0%        19    76.0%        33    84.6%
 13|George            15   100.0%        23    92.0%        36    92.3%
 14|
 15|CLASS
 16|AVERAGE                 74.2%              72.8%              70.5%
 17|
 18|
--------------------------------------------------------------------------------
H7: (Value, Layout-P1) +G7/G4

Type entry or use 9 commands                                       9-? for Help
```

## PART 6: USING THE @AVG FUNCTION

Jack was absent and did not take the third test. His 0% is lowering the overall class average. It would be better if the zero in cell G11 was left out of the class average calculation.

1. Move the cursor to cell H11 (0.0%).
2. Press Open-Apple B (to Blank).
3. Select: Entry ................................................................ press **RETURN**
4. The class average for TEST 3 should now show 80.6%.

**NOTE**: With the @AVG Function, the values in each cell are added together and then divided by the number of cells that *contain entries*. Cell H11 was counted in—it contained a zero from the calculation G11/G4. By blanking out cell H11, the zero was no longer included in the AVG calculation.

## PART 7: USING THE @SUM FUNCTION

After the first few scores have been recorded we can use the spreadsheet to calculate the Total Points Earned and the Average Score To Date for each student. Using a spreadsheet gradebook, a teacher can quickly print up-to-date grade information anytime during the term.

First we will place headings in columns I and J. Note that columns A and B scroll off of the screen as you work in columns I and J.

1. In cell I1 type TOTAL.
   In cell I2 type POINTS.

   In cell J1 type TEST.
   In cell J2 type AVERAGE.
   In cell J3 type TO DATE.

2. Move the cursor to cell I4.
   Note column A is no longer displayed on the screen.

3. In cell I4 enter @SUM(C4,E4,G4).
   This formula will add together the values entered in cells C4, E4, and G4, the points possible per test.

> **NOTE**: A function containing a **list** of cells (cells not necessarily adjacent to each other) is written with commas. By comparison, a **range** of cells (cells adjacent to each other) is written with a single period.

4. Copy this formula down column I, for row I6 through row I13 to obtain the Total Points earned for each student.

How are you doing with the Relative / No change questions?

## PART 8: CALCULATING A STUDENT'S AVERAGE SCORE FOR SEVERAL ACTIVITIES

1. Move the cursor to cell J6.

2. Enter the formula +I6/I4.
   This divides a student's total points to date (column I information) by the total points possible (cell I4 information).

3. Use Open-Apple L to change this entry to the PERCENT format, one decimal place.

4. Copy the formula in cell J6 down through J13.

## PART 9: RECALCULATING FORMULAS AUTOMATICALLY

Once a spreadsheet gradebook has been set up with labels, values, and the correct formulas, adding make-up scores is easy.

John has taken TEST 1 again. His score is now 12.

1. Move the cursor to cell C10 (9).

2. Type a 12.

3. Watch the screen when you press Return.

Did you notice the class averages and student scores adjusting to this latest entry ? Automatic recalculation is a standard spreadsheet setting. Later we will learn how to adjust this setting.

## PART 10: EDITING SPREADSHEET INFORMATION (Open-Apple U)

What are we going to do with Jack? With one score missing, he looks to be in big trouble with an overall average of 26.6%. With parent teacher conferences coming up, we will write a special formula just for our boy Jack.

1. Move the cursor to cell J11.

The total points possible for Jack's two tests is 40.

We need a formula that will divide the points he has earned to date (column I information) by his 40 total points.

2. Press Open-Apple U (to Edit contents of an entry).
   Note the cursor now at the bottom of the screen.

3. Use the Right Arrow key to move the cursor at the bottom of the screen to I4.

4. Press Open-Apple Y to delete the I4.

5. Type 40.

The formula at the bottom of the screen should say: +I11/40.

6. Press Return.

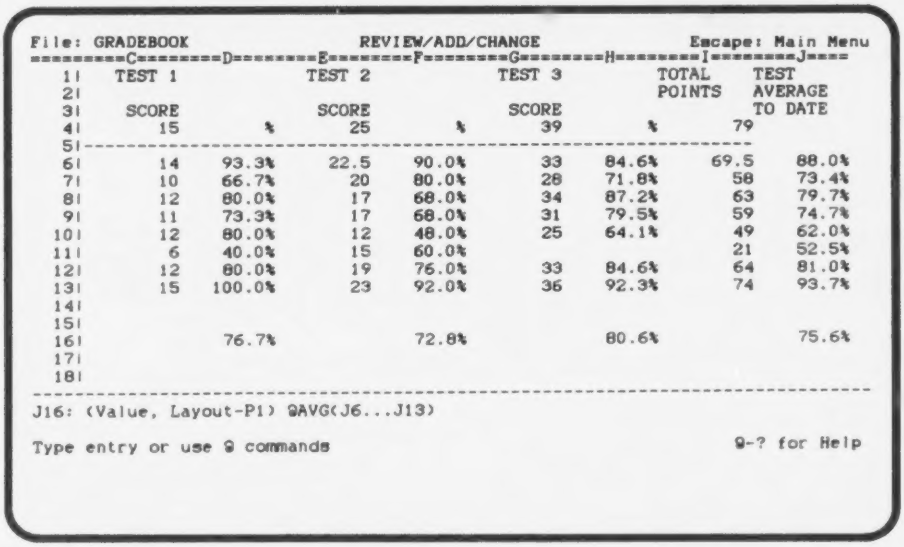
Jack should now be up to 52.5%. Note the spreadsheet below.

Now calculate the overall class AVERAGE:

7. In cell J16 type @AVG(J6.J13).
   This formula calculates the average test score for cells J6 through J13.

8. Adjust this last entry for a PERCENT format.

9. Your spreadsheet should look like this:



```
File: GRADEBOOK              REVIEW/ADD/CHANGE             Escape: Main Menu
=========C=========D=========E=========F=========G=========H=========I=========J====
  1|  TEST 1                   TEST 2                   TEST 3               TOTAL    TEST
  2|                                                                         POINTS   AVERAGE
  3|   SCORE                    SCORE                    SCORE                        TO DATE
  4|       15        %       25        %       39        %       79
  5|---------------------------------------------------------------
  6|       14    93.3%     22.5    90.0%       33    84.6%     69.5    88.0%
  7|       10    66.7%       20    80.0%       28    71.8%       58    73.4%
  8|       12    80.0%       17    68.0%       34    87.2%       63    79.7%
  9|       11    73.3%       17    68.0%       31    79.5%       59    74.7%
 10|       12    80.0%       12    48.0%       25    64.1%       49    62.0%
 11|        6    40.0%       15    60.0%                         21    52.5%
 12|       12    80.0%       19    76.0%       33    84.6%       64    81.0%
 13|       15   100.0%       23    92.0%       36    92.3%       74    93.7%
 14|
 15|
 16|             76.7%             72.8%             80.6%             75.6%
 17|
 18|
---------------------------------------------------------------------------------
J16: (Value, Layout-P1) @AVG(J6...J13)

Type entry or use @ commands                                       @-? for Help
```

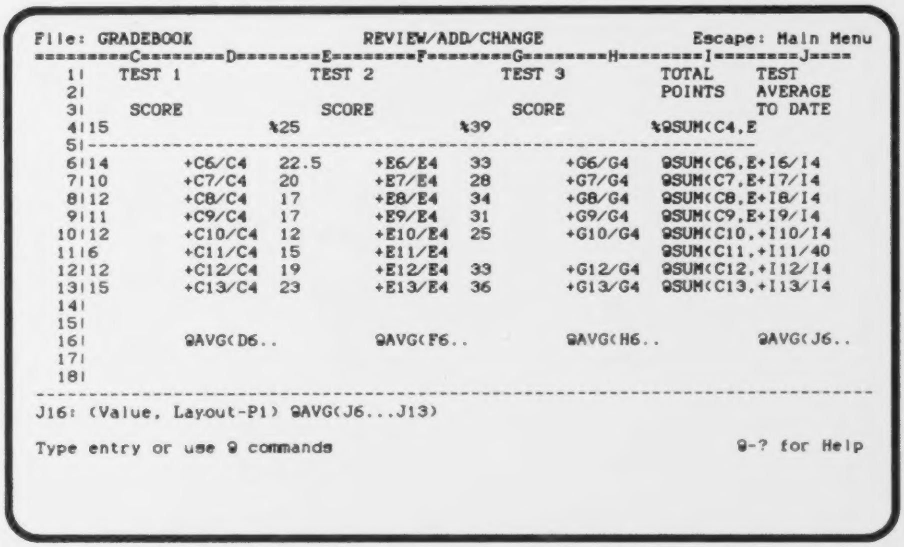
## PART 11: DISPLAYING FORMULAS ON SCREEN (Open-Apple Z)

*AppleWorks* allows you to view a spreadsheet several ways. We will look at two commands that affect how the spreadsheet is displayed.

Sometimes it is helpful to view all the formulas at one time. The Open-Apple Z command will provide this display.

1. The cursor can be anywhere in the spreadsheet.
2. Press Open-Apple Z (for Zoom).

Using the Zoom feature cell formulas are displayed:



```
File: GRADEBOOK                REVIEW/ADD/CHANGE              Escape: Main Menu
=========C=========D=========E=========F=========G=========H=========I=========J====
   1|  TEST 1                TEST 2                TEST 3          TOTAL      TEST
   2|                                                              POINTS     AVERAGE
   3|    SCORE                 SCORE                 SCORE                    TO DATE
   4|15                %25                   %39                   %@SUM(C4,E
   5|-----------------------------------------------------------------------
   6|14          +C6/C4    22.5        +E6/E4    33          +G6/G4    @SUM(C6,E+I6/I4
   7|10          +C7/C4    20          +E7/E4    28          +G7/G4    @SUM(C7,E+I7/I4
   8|12          +C8/C4    17          +E8/E4    34          +G8/G4    @SUM(C8,E+I8/I4
   9|11          +C9/C4    17          +E9/E4    31          +G9/G4    @SUM(C9,E+I9/I4
  10|12          +C10/C4   12          +E10/E4   25          +G10/G4   @SUM(C10,+I10/I4
  11|6           +C11/C4   15          +E11/E4                         @SUM(C11,+I11/40
  12|12          +C12/C4   19          +E12/E4   33          +G12/G4   @SUM(C12,+I12/I4
  13|15          +C13/C4   23          +E13/E4   36          +G13/G4   @SUM(C13,+I13/I4
  14|
  15|
  16|            @AVG(D6..             @AVG(F6..             @AVG(H6..            @AVG(J6..
  17|
  18|
------------------------------------------------------------------------------------
J16: (Value, Layout-P1) @AVG(J6...J13)

Type entry or use @ commands                                          @-? for Help
```

3. Place the cursor in a column I cell and compare what appears in the cell to information displayed at the cell indicator at the bottom of the screen.

> The column width determines how much of the formula can be viewed in the cell. You only see the part of the formula that fits. However, the complete formula is displayed at the cell indicator.
>
> To view a complete formula in a cell, the Open-Apple L command would be used to increase the column width.
>
> You can *print* a spreadsheet displaying the formulas by pressing Open-Apple P or Open-Apple H while the zoom is ***on***.

4. Press Open-Apple Z. The numbers will again be displayed on the screen.

## PART 12: FREEZING TITLES (Open-Apple T)

As we begin to use more columns in a spreadsheet, the first columns (e.g., student names) gets farther from the latest calculations (e.g., TEST SCORE AVERAGES). With *AppleWorks* we can *fix* a title area so it will not scroll off the screen.

1. Columns A and B will be ***frozen***.
   Have these two columns on the screen.

2. Move the cursor to column C.

3. Press Open-Apple T (for set Titles).

4. Select: Left side ............................................................ press **RETURN**

Columns A and B have now been set.

5. Move the cursor to the right.
   Note that columns A and B do not scroll off the screen.

   Note that as column H appears on the screen, column C scrolls *under* columns A and B.

We can now have the columns containing grade-related information scroll up next to the columns containing student names.

6. Experiment with this feature. Move the cursor all the way to the right *and* left.

7. Press Open-Apple T to return to regular screen viewing.

8. Experiment with the *top* and *both* options within the Open-Apple T command.

> Cursor location is important. Titles are set above the cursor if you select ***top***, to the left of the cursor if you select ***left side***, or above and to the left of the cursor if you select ***both***. Remember to place the cursor to the right and/or under the titles you want to set.

## PART 13: SETTING THE RECALCULATION ORDER (Open-Apple V)

In Part 14 you will arrange the list of students by their test average. Once this is done it would be difficult to return your spreadsheet to its original form. To insure that you could always return a spreadsheet to its original form we will assign row numbers.

1. Move the cursor to cell K1.

2. Type 1 and press the Down Arrow key.

3. In K2 type a 2 and press the Down Arrow key.

Have you noticed that after each entry *AppleWorks* pauses to recalculate all the formulas. Before entering any more numbers in this column we will set the spreadsheet so that we can add a lot of entries without this interruption.

4. Press Open-Apple V (for Standard Value).
5. For standards, select: Recalculate.
6. For recalculation, select: Frequency.
7. For frequency, select: Manual.
8. Now type a 3 in K3 and press the Down Arrow key.
9. Continue to number down the column, through row 16.

> When in the ***manual*** mode you will need to press Open-Apple K (to Kalculate) whenever you want formulas to be recalculated.

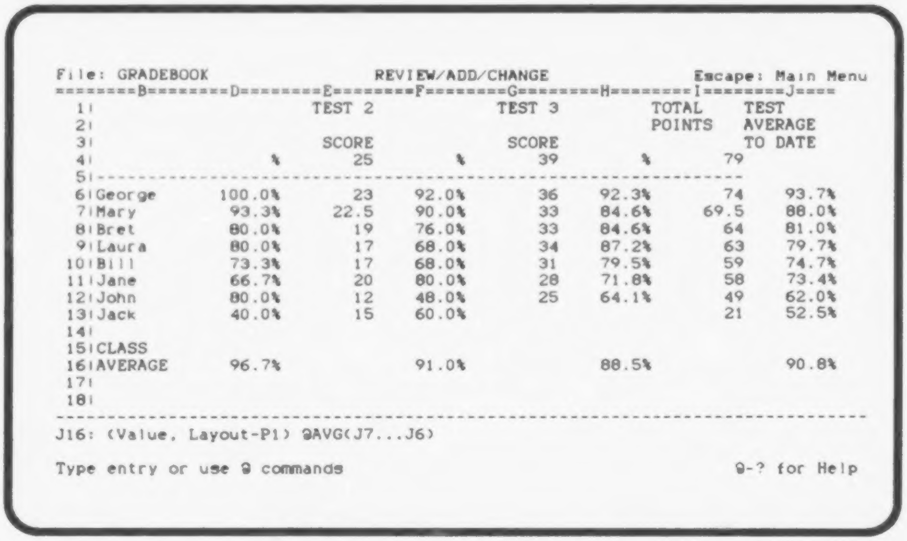
10. Now follow the steps outlined above, this time selecting ***Automatic*** to return the spreadsheet to automatic recalculation.

## PART 14: SPECIAL CONSIDERATIONS FOR ARRANGING SPREADSHEET ROWS

With Open-Apple A we can arrange the class list by highest to lowest test averages:

1. Move the cursor to cell J6 (88.0%).
2. Press Open-Apple A.
3. Highlight rows 6 through 13................................................ press **RETURN**
4. Select: Values from 9 to 0.

With an overall test average of 93.7%, George should now be at the top of the class list. With an 52.5% average, Jack is in last place:



```
File: GRADEBOOK                REVIEW/ADD/CHANGE              Escape: Main Menu
========B========D========E========F========G========H========I========J====
  1|                     TEST 2            TEST 3         TOTAL    TEST
  2|                                                      POINTS   AVERAGE
  3|                      SCORE             SCORE                  TO DATE
  4|                 %       25        %       39        %       79
  5|---------------------------------------------------------------
  6|George      100.0%       23    92.0%       36    92.3%       74    93.7%
  7|Mary         93.3%     22.5    90.0%       33    84.6%     69.5    88.0%
  8|Bret         80.0%       19    76.0%       33    84.6%       64    81.0%
  9|Laura        80.0%       17    68.0%       34    87.2%       63    79.7%
 10|Bill         73.3%       17    68.0%       31    79.5%       59    74.7%
 11|Jane         66.7%       20    80.0%       28    71.8%       58    73.4%
 12|John         80.0%       12    48.0%       25    64.1%       49    62.0%
 13|Jack         40.0%       15    60.0%                         21    52.5%
 14|
 15|CLASS
 16|AVERAGE      96.7%             91.0%             88.5%             90.8%
 17|
 18|
-------------------------------------------------------------------------------
J16: (Value, Layout-P1) @AVG(J7...J6)

Type entry or use @ commands                                       @-? for Help
```

## WAIT!!! WHAT HAS HAPPENED TO ROW 16 ?? THE CALCULATIONS HAVE CHANGED

It appears that the Open-Apple A procedure has recalculated the CLASS AVERAGE for each test—and is now displaying incorrect averages!

1. Move the cursor to cell J16.

According to the cell indicator at the bottom of the screen the function is averaging cells J7 through J6: @AVG(J7. . .J6).

This is giving us the average for Mary and George!!

2. Move the cursor to cell H16.
   The same thing! @AVG(H7. . .H6).

This is *not* the range entered in either Part 2 or Part 10. We entered a formula averaging row 6 through row 13. Mary and George just happened to be the first and last student entries in this range.

3. With the cursor on cell A6, try arranging this list alphabetically by last name.

4. Check cell D16.

We continue to get only the range of cells between Mary and George, not the range for the entire class.

**NOTE**: When writing a function, identify the range of cells containing the values, ***plus an ADDITIONAL blank cell both above and below this range.*** These blank cells will represent the beginning and ending cells for the range of cells identified in a function.

For a function to calculate correctly, these cells should *not* be included when arranging spreadsheet rows.

To receive the correct calculations we will have to edit the class average formulas.

5. Move the cursor to cell D16 (96.7%).
6. Press Open-Apple U.
   We will edit the cell range in this function.
7. Change the function to include the necessary *above* and *below* row:
   @AVG(D5...D14).
8. Press Return.
   The class average for Test 1 should now indicate 76.7%.

Now try arranging this class list:

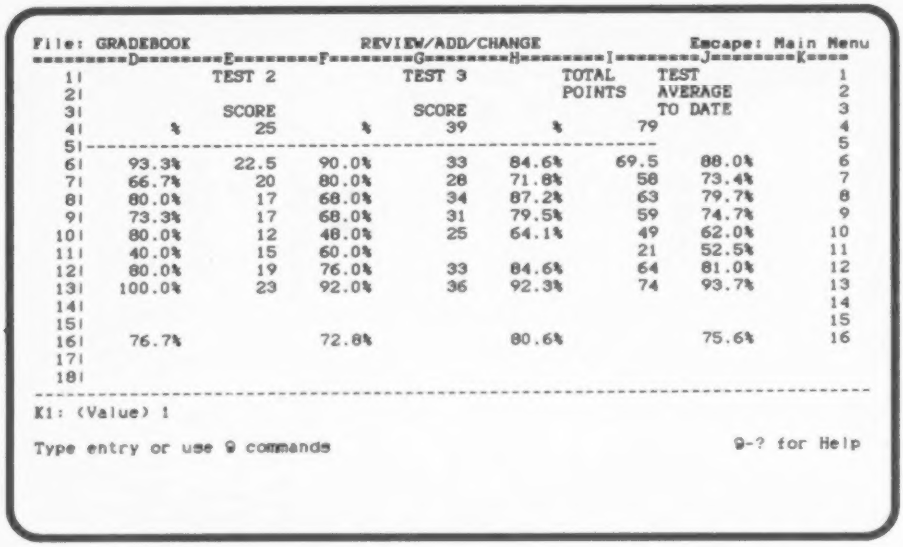
9. Move the cursor to cell D6.
10. Press Open-Apple A.
11. Highlight rows 6 through 13................................................ press **RETURN**
12. Select: Values from 0 to 9

Since Jack received the lowest score, he should now be at the top of the list. The CLASS AVERAGE for Test 1 should be 76.7%.

13. Move the cursor to cell A6.
14. Arrange this list alphabetically from A to Z.

Bret Beardsley should now be listed first. The class average for Test 1 should still be 76.7%.

15. You will have to *adjust* the remaining three functions on row 16 by making a **Relative** copy of the function in cell D16, or by using Open-Apple U and changing the range of cells.
16. When done return this spreadsheet to its original form by arranging rows 1 through 16 in column K, from low to high.
17. Note that the formulas in row 16 are still in their correct form.



```
File: GRADEBOOK                 REVIEW/ADD/CHANGE              Escape: Main Menu
==========D=========E=========F=========G=========H=========I=========J=========K====
    1|           TEST 2              TEST 3             TOTAL    TEST                 1
    2|                                                  POINTS   AVERAGE              2
    3|             SCORE               SCORE                     TO DATE              3
    4|         %      25         %        39         %       79                       4
    5|------------------------------------------------------------                    5
    6|     93.3%     22.5     90.0%       33     84.6%     69.5     88.0%             6
    7|     66.7%       20     80.0%       28     71.8%       58     73.4%             7
    8|     80.0%       17     68.0%       34     87.2%       63     79.7%             8
    9|     73.3%       17     68.0%       31     79.5%       59     74.7%             9
   10|     80.0%       12     48.0%       25     64.1%       49     62.0%            10
   11|     40.0%       15     60.0%                          21     52.5%            11
   12|     80.0%       19     76.0%       33     84.6%       64     81.0%            12
   13|    100.0%       23     92.0%       36     92.3%       74     93.7%            13
   14|                                                                               14
   15|                                                                               15
   16|     76.7%              72.8%              80.6%              75.6%            16
   17|
   18|
-------------------------------------------------------------------------------------
K1: (Value) 1

Type entry or use @ commands                                          @-? for Help
```

18. When these changes have been made, save your work.

# ACTIVITY 4
# ADDITIONAL SPREADSHEET FUNCTIONS AND FEATURES

In Activities 1, 2 and 3, four spreadsheet functions were introduced: @SUM, @AVG, @MAX, and @MIN. In this activity you will examine the @IF and @LOOKUP functions.

The Open-Apple T command that allowed you to fix a top or side section of the spreadsheet so that it remained stationary (as compared to scrolling off the screen) has also been introduced. In this activity you will examine the Open-Apple W (Windows) command.

And thus far you have been setting cell formats (right justified labels, values displayed as percentages, etc.) for particular sections of a spreadsheet through Open-Apple L. In this activity you will use a global (**standard**) setting to apply a format to an entire spreadsheet.

1. Begin at the Main Menu.
2. Add the GRADEBOOK 2 spreadsheet to the Desktop.
3. Move through this spreadsheet and examine the following components:
    - Student point and percentage scores for three tests;
    - Student average for three tests;
    - The class average for each test; and
    - The overall class average for the three tests.

## PART 1: SETTING A STANDARD FORMAT FOR LABELS (Open-Apple V)

Thus far you have learned how to adjust the layout for label and value entries using the Open-Apple L (Layout) command. With this command a specific layout could be set up for one or more cells, columns, or rows (e.g., label entries centered, value entries displayed with two decimal places, etc.). *AppleWorks* also provides a command for setting a standard format that applies *throughout* the entire spreadsheet. Then whatever is entered on the spreadsheet will automatically be displayed in that format.

1. Press Open-Apple V (for Standard Value).
2. For standards, select: Label format.
3. For label format, select: Right Justify.
   Student names and all heading information now appears right-justified in the cells. All new label entries will also have this format.

Now insert a new column and enter a new heading.

4. Move the cursor to cell K1 and press Open-Apple I (to Insert).
5. Select: Columns.
6. For how many, type: 1 ........................................................ press **RETURN**
7. In cell K1 type: HONOR.
8. In cell K2 type: ROLL.
   Note the automatic right justification.

## PART 2: USING THE @IF FUNCTION

Using the @IF function, we can identify and quickly mark those students who have an overall test average of 85% or greater. We can write an @IF function to identify those students, and place a YES in the new "honor roll" column. Students who have not averaged 85% or greater can also be identified.

In other words, *IF* it is true that a student's score is 85% or greater, *THEN* we want the spreadsheet to display an appropriate label. *IF* this is not true, *THEN* an alternate message is to be displayed.

**NOTE**: With *AppleWorks 3.0* the IF function can display either numbers or text when identifying items that do, or do not, meet the given criteria. Prior *AppleWorks* versions did not have the capability to display text (such as *True* or *False*, *Honors* or *No Honors*). Only numbers were allowed.

First we will write a function to evaluate Mary Smith's 88% test average.

1. Move the cursor to cell K6 and type: @IF(
   Remember to use the Shift key to type the *at* and parenthesis symbol.
2. After the opening parenthesis, we must identify the cell containing Mary's 88%. Move the cursor to cell J6 and press Return.
3. Note the beginnings of your @IF function at the bottom of the screen. You just included cell J6 in the formula by "pointing" — simply moving the cursor to the desired cell.
4. We are looking for scores *greater than* or *equal* to 85%. We next need to type a ***logical operator***.

   To state this, type: @IF(J6>=.85

Note: Use the Shift key to type the greater than ( > ) symbol.

To complete the function we need:

1) a comma,

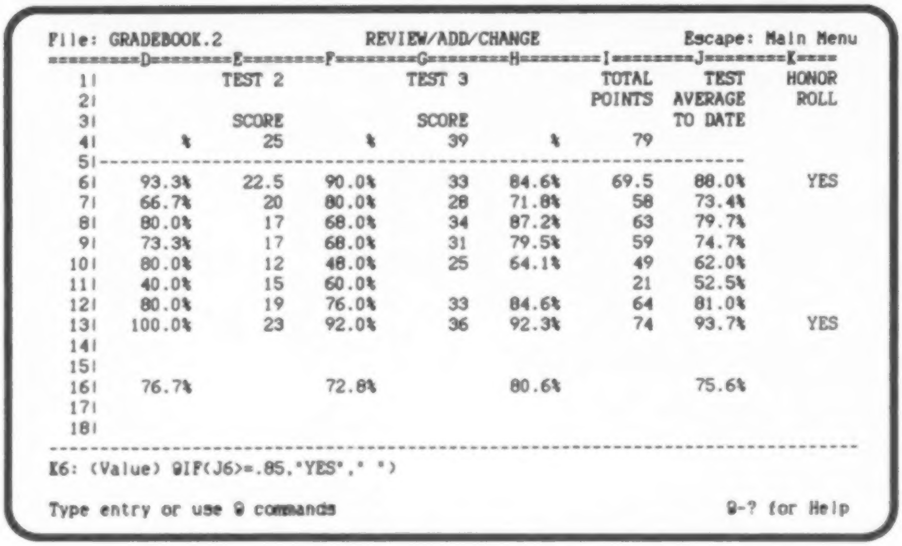
2) the text to be displayed if Mary's scores meets the criteria, and

3) the alternate display if Mary's score is below 85%.

5. To state this, type: @IF(J6>=.85,"YES","NO").
   Note: the spreadsheet *will not* accept text unless quotes have been included.
   Note: the spreadsheet will beep if you do not enter a closing parenthesis.
6. Press Return and note what appears in K6.
7. This seems to work.
   Make a relative copy of this @IF statement in cells K7 *through* K13.
8. The recalculation setting is on *manual*. Use Open-Apple K to manually recalculate this new function.
9. Pretty nice! It appears that students in rows 6 and 13 qualify for the honor roll.

As mentioned above, with *AppleWorks 3.0* the @IF function can display either text or number messages. We will edit this @IF function slightly to more prominently display qualifying students.

10. With the cursor on cell K6, press Open-Apple U (to edit contents of an entry).
11. With the cursor at the bottom of the screen, replace the NO message with a blank space between the second set of quotes.
    Have the function read: @IF(J6>=.85,"YES"," ")...................... press **RETURN**
12. Again copy the function in K6 into cells K7 through K13.
13. Again manually recalculate.
14. You spreadsheet should look like this:



```
File: GRADEBOOK.2            REVIEW/ADD/CHANGE            Escape: Main Menu
=========D=========E=========F=========G=========H=========I=========J=========K====
  1|            TEST 2            TEST 3             TOTAL     TEST    HONOR
  2|                                                POINTS  AVERAGE     ROLL
  3|             SCORE             SCORE                    TO DATE
  4|        %       25        %       39        %       79
  5|---------------------------------------------------------------
  6|    93.3%     22.5    90.0%       33    84.6%     69.5    88.0%      YES
  7|    66.7%       20    80.0%       28    71.8%       58    73.4%
  8|    80.0%       17    68.0%       34    87.2%       63    79.7%
  9|    73.3%       17    68.0%       31    79.5%       59    74.7%
 10|    80.0%       12    48.0%       25    64.1%       49    62.0%
 11|    40.0%       15    60.0%                         21    52.5%
 12|    80.0%       19    76.0%       33    84.6%       64    81.0%
 13|   100.0%       23    92.0%       36    92.3%       74    93.7%      YES
 14|
 15|
 16|    76.7%             72.8%             80.6%             75.6%
 17|
 18|
------------------------------------------------------------------------------------
K6: (Value) @IF(J6>=.85,"YES"," ")

Type entry or use @ commands                                          @-? for Help
```

*AppleWorks* uses the following logical operators between the first and second numbers in an @IF function:

| | |
|---|---|
| A<B (A is less than B) | A<=B (A is less than or equal to B) |
| A>B (A is greater than B) | A>=B (A is greater than or equal to B) |
| A=B (A equals B) | A<>B (A is not equal to B) |

@AND goes in front of a series of conditions and means that they all must be true before *AppleWorks* chooses the true value. For example: @IF(@AND(A1>100,B1>100)50,0) translates "If the value in A1 is greater than 100 *and* the value in B1 is greater than 100, the statement is true and returns a value of 50. If *either* statements is false, then return a value of 0."

@OR goes in front of a series of conditions and means that if any one of them is true, then *AppleWorks* should evaluate the statement as true. For example: @IF(@OR(A1>100,B1>100)50,0) would return a value of 50 if *either* of the comparisons is true, otherwise a 0 value is returned.

## PART 3: VIEWING THE SPREADSHEET THROUGH TWO "WINDOWS" (Open-Apple W)

The information in this spreadsheet is beginning to spread out, and it would be nice to know who is on rows 6 and 13. We will split the screen into two windows and compare sections of the spreadsheet *up next to each other*. With two windows you can move the data in one window, while the other data stays put, or you can move through the data in both windows at the same pace, in the same direction.

1. With both column A and column B on the screen, move the cursor to column C.

2. Press Open-Apple W (for Windows).

3. Select: Side by side ........................................................ press **RETURN**

4. Move the cursor to column G, then H, then I. Note how student information moves up to the left-hand window.

5. Move the cursor to view columns J and K directly adjacent to column A and B.

6. Press Open-Apple J (for Jump). Try scrolling information sideways in this window also.

7. Again press Open-Apple W. Select: Synchronized.
   Now whatever movement you cause with the Up or Down Arrow keys in one window will also occur in the other window.

8. Move the cursor down through the rows and note how both windows move together.

9. Press Open-Apple W. Select: Unsynchronized.
   You can now move data up and down in one window independent of the other.

10. Move the cursor up and down through one window.

11. To return to the single screen, again press Open-Apple W, and select: One.

## PART 4: SETTING UP A LOOKUP TABLE

We will use another very useful function, this one to assign students a letter grade. To use the @LOOKUP function we will first have to set up a *table* for determining the grading scale (77% = C+, 95% = A, etc.). Then we will write an @LOOKUP function to use this *table* to compare a student's test average to the range of possible scores. Where the @LOOKUP function has been written, a corresponding letter grade will be printed.

First we will insert another new column and headings.

1. Move the cursor to cell L1 and press Open-Apple I (to Insert).

2. Select: Columns.

3. For how many, type: 1 ...................................................... press **RETURN**

4. In cell L1, type: FINAL.

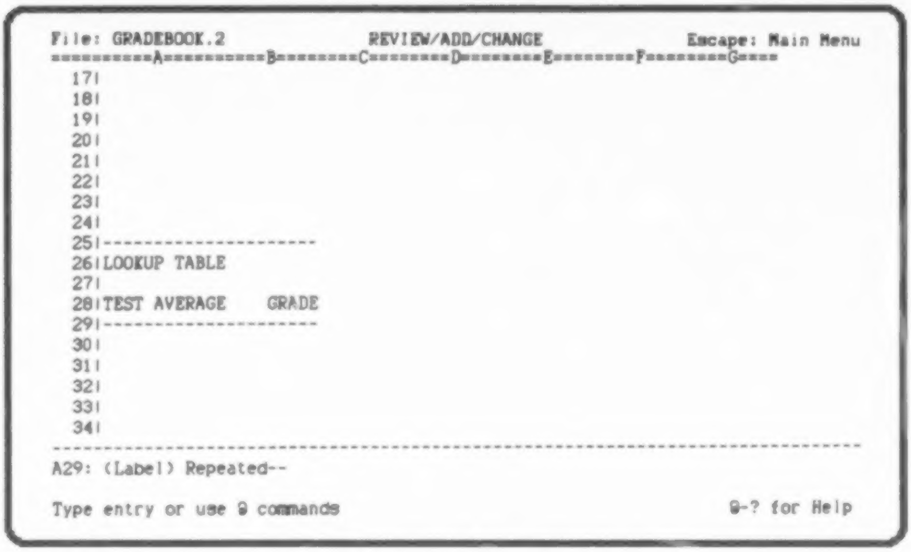
5. In cell L2, type: GRADE.
   Again note the automatic label right justification.

6. Move the cursor to cell K5.

7. Type a line of dashes ( -------) *through* K5 and L5.

Next we will set up a Lookup Table. This table can be placed anywhere on the spreadsheet. We will place this table in columns A and B, beginning on row 25.

8. To find cell A25 press Open-Apple F, select "coordinates" and enter A25.
9. Type a line of dashes ( ------- ) through A25 and B25.
10. In cell A26 type: LOOKUP TABLE.
11. In cell A28 type: TEST AVERAGE.
12. In cell B28 type: GRADE. Set this entry for right justification.
13. Move the cursor to cell A29, and type a line of dashes ( ----- ) through A29 and B29.



```
File: GRADEBOOK.2              REVIEW/ADD/CHANGE             Escape: Main Menu
==========A===========B=========C=========D=========E=========F=========G====
  17|
  18|
  19|
  20|
  21|
  22|
  23|
  24|
  25|---------------------
  26|LOOKUP TABLE
  27|
  28|TEST AVERAGE    GRADE
  29|---------------------
  30|
  31|
  32|
  33|
  34|
------------------------------------------------------------------------------
A29: (Label) Repeated--

Type entry or use @ commands                                       @-? for Help
```

Next we will enter a range of possible test scores. Since we are referring to possible percentage scores, each number will be entered as a decimal (85.0% = .85). We will begin with .0 in cell A30. Then we will enter progressively higher scores down column A.

> **NOTE**: *AppleWorks* requires the values in a LookUp Table to be in ascending order.

14. Enter the following possible test averages in the appropriate cells:

| Cell: | Test Average: |
|---|---|
| A30 | 0 |
| A31 | .6 |
| A32 | .63 |
| A33 | .67 |
| A34 | .7 |
| A35 | .73 |
| A36 | .77 |
| A37 | .8 |
| A38 | .83 |
| A39 | .87 |
| A40 | .9 |
| A41 | .93 |
| A42 | 1. |

15. Change the layout for the block of values in cells A30 through A42 to a Percent with one decimal place.

Next we will complete this table. If a student's test average is less than 60.0%, she or he will a receive an F grade. If a student's test average is 93% or greater, she or he will receive an A. Letter grades ranging from A to D- and F will be distributed on this table. Please note that teachers can determine any grade distribution they choose—as long as they observe the basic principles for setting up a lookup table.

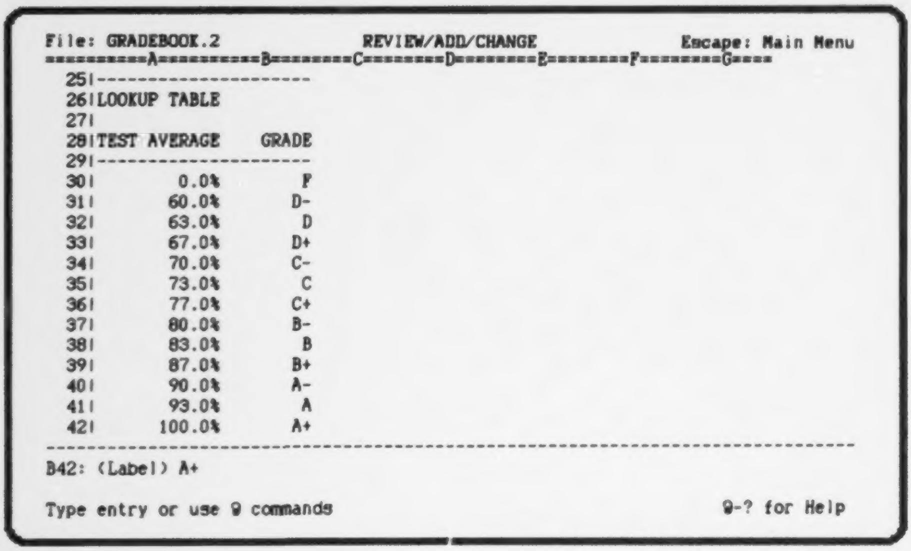
16. Move the cursor to cell B30 and enter an F.

17. Move the cursor to cell B31 and enter an D-.

18. Enter the following:

| Cell: | Letter Grade: |
|---|---|
| B32 | D |
| B33 | D+ |
| B34 | C- |
| B35 | C |
| B36 | C+ |
| B37 | B- |
| B38 | B |
| B39 | B+ |
| B40 | A- |
| B41 | A |
| B42 | A+ |

19. Note the automatic right justification.



```
File: GRADEBOOK.2              REVIEW/ADD/CHANGE              Escape: Main Menu
==========A===========B========C========D========E========F========G====
  25|---------------------
  26|LOOKUP TABLE
  27|
  28|TEST AVERAGE    GRADE
  29|---------------------
  30|         0.0%       F
  31|        60.0%      D-
  32|        63.0%       D
  33|        67.0%      D+
  34|        70.0%      C-
  35|        73.0%       C
  36|        77.0%      C+
  37|        80.0%      B-
  38|        83.0%       B
  39|        87.0%      B+
  40|        90.0%      A-
  41|        93.0%       A
  42|       100.0%      A+
--------------------------------------------------------------------------------
B42: (Label) A+

Type entry or use @ commands                                        @-? for Help
```

## PART 5: WORKING WITH THE @LOOKUP(    ) FUNCTION

We now have a table containing a range of test averages and corresponding letter grades. *AppleWorks* will use this table to evaluate a student's test average, find the nearest score on the table, and then assign a letter grade. For example: If the student score is 77.5%, *AppleWorks* will find 80.0% and assign the letter grade from the row above, a C+. This student would need a score of 80% or higher to receive an B- grade.

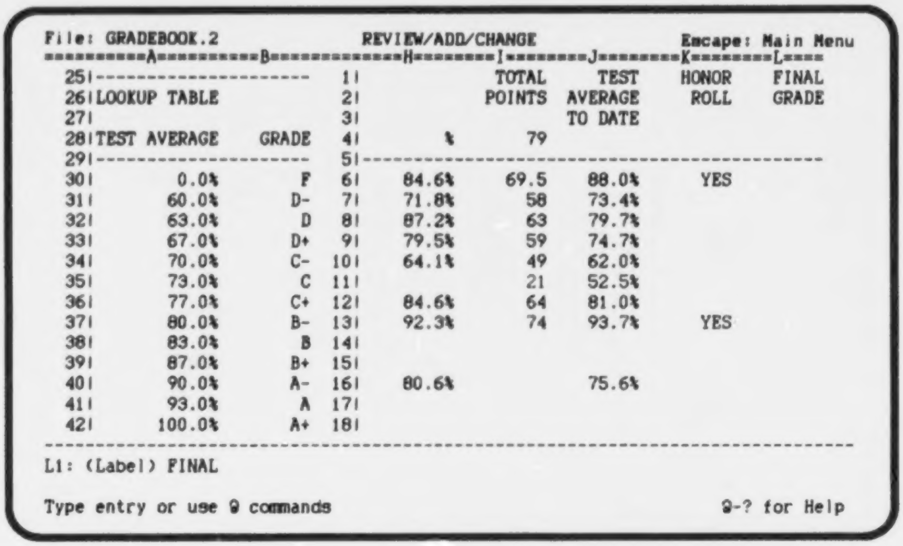
We will "adjust" the screen for easier viewing,write a @LOOKUP function for Bill Riley, and test our table.

1. Move the cursor to cell C25.

2. Use Open-Apple W to split the screen into two "Side by side" windows.

3. Jump the cursor to the left window, and using the Down Arrow key, position row 25 at the top of the screen.

4. Jump the cursor to the right window and move to cell L1:



```
File: GRADEBOOK.2              REVIEW/ADD/CHANGE                 Escape: Main Menu
==========A==========B============H========I========J========K========L====
  25|---------------------    1|                TOTAL     TEST    HONOR     FINAL
  26|LOOKUP TABLE             2|               POINTS  AVERAGE     ROLL     GRADE
  27|                         3|                       TO DATE
  28|TEST AVERAGE    GRADE    4|         %         79
  29|---------------------    5|-----------------------------------------------
  30|        0.0%        F    6|     84.6%       69.5    88.0%      YES
  31|       60.0%       D-    7|     71.8%         58    73.4%
  32|       63.0%        D    8|     87.2%         63    79.7%
  33|       67.0%       D+    9|     79.5%         59    74.7%
  34|       70.0%       C-   10|     64.1%         49    62.0%
  35|       73.0%        C   11|                   21    52.5%
  36|       77.0%       C+   12|     84.6%         64    81.0%
  37|       80.0%       B-   13|     92.3%         74    93.7%      YES
  38|       83.0%        B   14|
  39|       87.0%       B+   15|
  40|       90.0%       A-   16|     80.6%                 75.6%
  41|       93.0%        A   17|
  42|      100.0%       A+   18|
---------------------------------------------------------------------------------
L1: (Label) FINAL

Type entry or use @ commands                                         @-? for Help
```

5. In cell L6 enter the following function: @LOOKUP(J6,A30.A42).

6. Press Return.

7. Is the @LOOKUP function working?

> **NOTE**: The @LOOKUP function checks the value in cell J6 (Mary's 88%), checks the range of scores in cells **A30 through A42**, finds the nearest score that is *NOT GREATER THAN* Mary's, and assigns the corresponding letter grade in the adjacent column B. The letter grade is displayed where the @LOOKUP function was written.

8. Mary's letter grade is a B+. If she could get her test average up to 90.0%, she would receive an A-.

9. Copy the @LOOKUP function from cell L6 into cells L7 *through* L13.

   Note: References to values in column J should be a "Relative."
   Reference to cells A30 and A42 should be "No Change."

10. If necessary, press Open-Apple K for formulas to be recalculated.

11. Refer to the LookUp Table in the left window to see if you agree with what the function has calculated as a letter grade (column L) for each test average (column J).

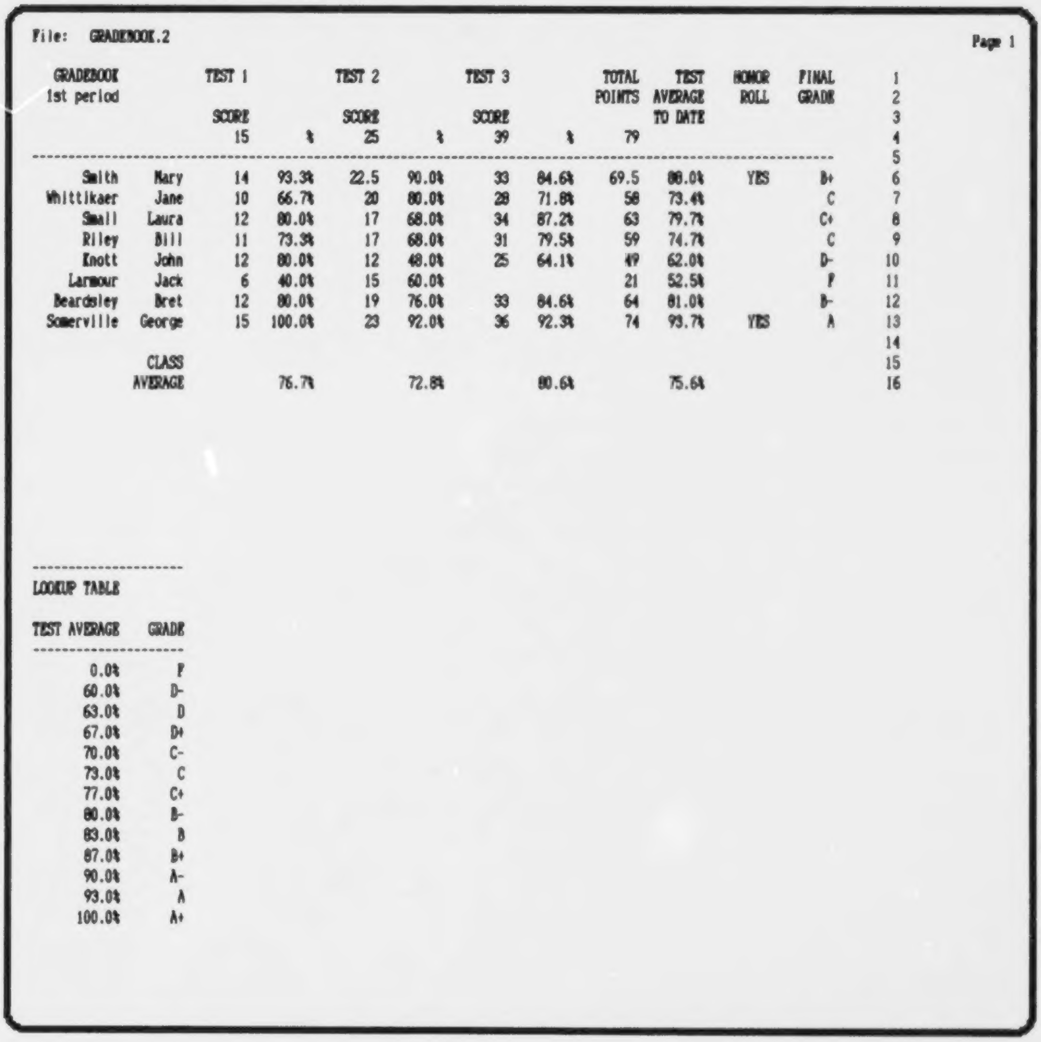
To print this entire spreadsheet we will need to make a few printer option adjustments,

12. Use Open-Apple O to change the Characters per Inch setting to 17.

13. Note the number of characters per line now available.

14. Print a copy of this entire spreadsheet (**All**).
Note that this spreadsheet will be 120 characters wide.

15. When printed it should look similiar to this:



```
File:   GRADEBOOK.2                                                                                  Page 1

  GRADEBOOK         TEST 1          TEST 2          TEST 3              TOTAL    TEST   HONOR   FINAL         1
 1st period                                                            POINTS AVERAGE    ROLL   GRADE         2
                     SCORE           SCORE           SCORE                    TO DATE                         3
                        15       %      25       %      39       %        79                                  4
-------------------------------------------------------------------------------------------------------       5
      Smith      Mary   14   93.3%    22.5   90.0%      33   84.6%      69.5   88.0%     YES      B+         6
 Whittikaer      Jane   10   66.7%      20   80.0%      28   71.8%        58   73.4%               C          7
      Small     Laura   12   80.0%      17   68.0%      34   87.2%        63   79.7%              C+          8
      Riley      Bill   11   73.3%      17   68.0%      31   79.5%        59   74.7%               C          9
      Knott      John   12   80.0%      12   48.0%      25   64.1%        49   62.0%              D-         10
    Larmour      Jack    6   40.0%      15   60.0%                        21   52.5%               F         11
  Beardsley      Bret   12   80.0%      19   76.0%      33   84.6%        64   81.0%              B-         12
 Somerville    George   15  100.0%      23   92.0%      36   92.3%        74   93.7%     YES       A         13
                                                                                                             14
                CLASS                                                                                        15
              AVERAGE        76.7%           72.8%           80.6%             75.6%                         16




---------------------
LOOKUP TABLE

TEST AVERAGE   GRADE
---------------------
        0.0%       F
       60.0%      D-
       63.0%       D
       67.0%      D+
       70.0%      C-
       73.0%       C
       77.0%      C+
       80.0%      B-
       83.0%       B
       87.0%      B+
       90.0%      A-
       93.0%       A
      100.0%      A+
```

16. Save this file.

**Things to Consider:**

Note that Bill Riley has a test average of 74.7% and received a C grade. The current lookup table requires a test average of at least 75% for a student to receive a letter grade of C+. It's not set up to round grades up.

Like Bill, Laura Small is not very happy with her final grade. With a 79.7% test average, she felt that she should get a B. Perhaps the current scoring system needs some adjustment. If you have the time or interest, change the lookup table to accommodate the concerns of these students.

# ACTIVITY 5
# COPYING WITHIN A SPREADSHEET AND BETWEEN SPREADSHEET FILES

Thus far we have used the Open-Apple C (Copy) command to copy information from *one* cell to a new destination within the same spreadsheet file. Typically we have copied a formula from one cell into a range of cells. In this activity we will further examine *AppleWorks* copy features: for copying blocks of information within one spreadsheet, and from one spreadsheet to another.

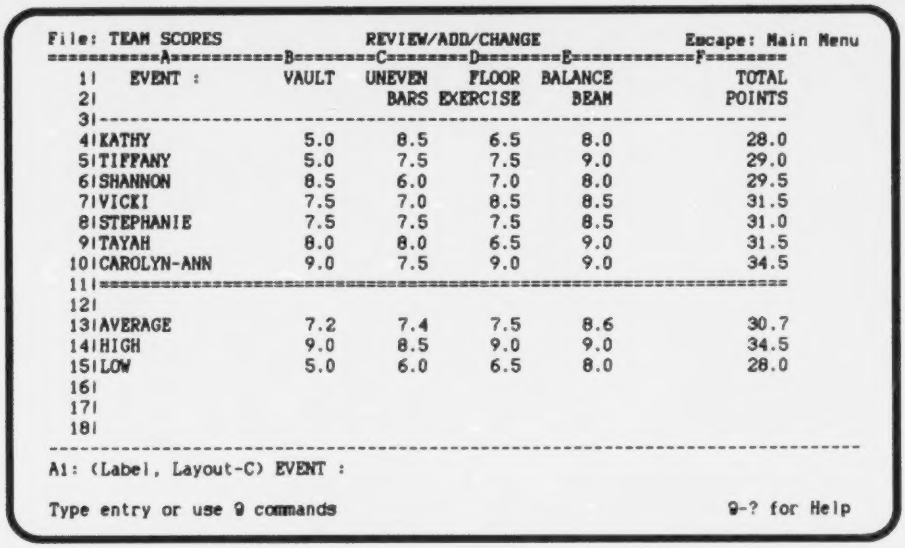
In Part 2, you will make a copy of the gymnastics spreadsheet you completed in Activity 2. First we will try copying information ***within the same worksheet*** (the same file). In Part 3 you'll try copying the same material *to* and *from* the Clipboard. When done, you will blank out scores from one of the duplicate spreadsheets to get a spreadsheet ***template*** set up to calculate totals for another gymnastics meet.

In Part 5, you will make a copy of the gymnastics template into *another* spreadsheet via the Clipboard.

## PART 1: ADDING A SPREADSHEET FILE TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop........................................ press **RETURN**
3. Select: 1. From the current disk............................................ press **RETURN**
4. Select: --> TEAM SCORES................................................ press **RETURN**

5. The following spreadsheet should now be on the screen :



```
File: TEAM SCORES              REVIEW/ADD/CHANGE              Escape: Main Menu
============A============B=========C=========D=========E==============F=========
   1|   EVENT :          VAULT    UNEVEN     FLOOR  BALANCE            TOTAL
   2|                               BARS  EXERCISE     BEAM           POINTS
   3|-----------------------------------------------------------------------
   4|KATHY                 5.0       8.5       6.5      8.0             28.0
   5|TIFFANY               5.0       7.5       7.5      9.0             29.0
   6|SHANNON               8.5       6.0       7.0      8.0             29.5
   7|VICKI                 7.5       7.0       8.5      8.5             31.5
   8|STEPHANIE             7.5       7.5       7.5      8.5             31.0
   9|TAYAH                 8.0       8.0       6.5      9.0             31.5
  10|CAROLYN-ANN           9.0       7.5       9.0      9.0             34.5
  11|=======================================================================
  12|
  13|AVERAGE               7.2       7.4       7.5      8.6             30.7
  14|HIGH                  9.0       8.5       9.0      9.0             34.5
  15|LOW                   5.0       6.0       6.5      8.0             28.0
  16|
  17|
  18|
--------------------------------------------------------------------------------
A1: (Label, Layout-C) EVENT :

Type entry or use 9 commands                                       9-? for Help
```

## PART 2: COPYING A BLOCK OF INFORMATION WITHIN A WORKSHEET (Open-Apple C)

If we wanted to duplicate all labels, values, and formulas from one section of a spreadsheet to another, we could use the following copy method.

1. Place the cursor on cell A1.
2. Press Open-Apple C (to Copy).
3. Select: Within worksheet ................................................ press **RETURN**
4. Read the bottom of the screen. This time the **source** will be all rows containing labels, values, or formulas.
5. Use the Down Arrow key to highlight column A, rows 1 through 15.
6. Use the Right Arrow key to highlight columns B through F............ press **RETURN**
7. Read the bottom of the screen.
8. Use the Down Arrow key to move the cursor to cell A20 (look carefully to see the highlighted column *flicker* as the cursor moves to cell A20).
9. Press Return.

For each variable within each formula you are copying you must tell *AppleWorks 3.0* to copy the cell reference as either a "No Change" or "Relative." Rows 13, 14, and 15 contain formulas. So does column F.

10. For reference to B3 in the @AVG function, select: Relative ........... press **RETURN**
11. For reference to B11 in the @AVG function, select: Relative ......... press **RETURN**
12. For reference to B3 in the @MAX function, select: Relative .......... press **RETURN**

This could take awhile . . . . If you are copying more than one formula at a time, and *all* copies will be either relative or no change, there is a command to quickly copy all remaining formulas the same way.

13. For reference to B11 in the @MAX function, select: Relative *and* hold down the Open-Apple key when pressing Return.

All remaining formulas have now been copied, relative.

14. Examine cell B32 to determine whether a relative copy was made. How about the formulas in column F, were they copied correctly?

> **Note**: *AppleWorks 3.0* provides a procedure to copy a Block of cells *within* a spreadsheet. With earlier version only Rows or Columns could be copied within a spreadsheet — a time consuming process.

## PART 3: COPYING A BLOCK OF INFORMATION TO THE CLIPBOARD (Open-Apple C)

There is another method for copying a Block of information: you can copy to the Clipboard, and then copy (paste) it back into the *same* file with **relative** cell references transferred. Let's try.

1. Again move the cursor to cell A1.
2. Press Open-Apple C (to Copy).
3. Select: To clipboard.
4. Select: Block.
5. Use the Down Arrow key to highlight rows 1 through 15, and the Right Arrow key to highlight columns B through F.

6. Press Return.
   A copy of your spreadsheet will be on the Clipboard.
   (No, there wasn't any message to confirm this . . . )
7. Move the cursor to cell A40.
8. Press Open-Apple C (to Copy).
9. Select: From clipboard.
10. Select: Formulas and values.

A *third* copy of your spreadsheet will now be in this file. There is also a copy of this spreadsheet on the Clipboard.

11. Move the cursor to cell F43 and note the formula.

> NOTE: When you copy blocks to the Clipboard and then paste them back somewhere else in the same spreadsheet (or in another one), the references automatically change to reflect the new **relative** positions.

## PART 4: CREATING A SPREADSHEET TEMPLATE

The first spreadsheet can now be used as a ***template*** for future gymnastic meets by resetting all the event scores to zero. As the scores are changed to 0.0 note that the TOTAL POINT, AVERAGE, HIGH, and LOW values are recalculated.

1. To quickly get the cursor back to cell B4, press Open-Apple F (to Find).
2. Select: Coordinates ........................................................ press **RETURN**
3. For comparison, type: B4................................................. press **RETURN**
4. With the cursor in cell B4, type: 0.0 ...................................... press **RETURN**
5. Press Open-Apple C.
6. Select: Within worksheet .................................................. press **RETURN**
7. The source will be cell B4................................................... press **RETURN**

The new location will begin in cell B5.

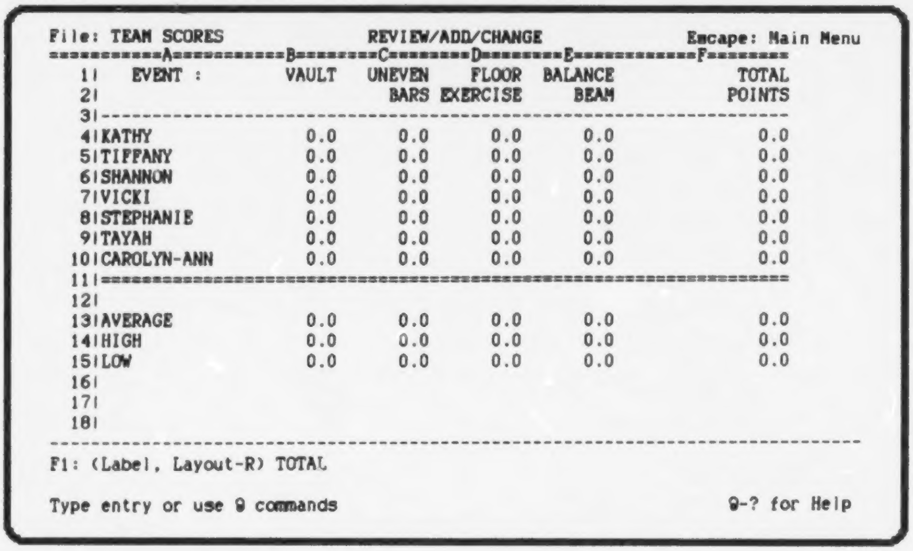
8. Move to B5.
9. Type a period.
10. Use the Right Arrow key to highlight Columns C, D, and E.
    *Do not include column F—or you will wipe out the formulas.*

11. Use the Down Arrow key to highlight Rows 6 through 10.
*Do not include rows 11 through 15—or you will wipe out these formulas.*

12. Press Return.

13. Use the copy procedure to change the values in cells C4, D4, and E4 to 0.0.

14. Your spreadsheet **template** should look like this:



```
File: TEAM SCORES              REVIEW/ADD/CHANGE             Escape: Main Menu
===========A===========B=========C=========D=========E============F========
  1|   EVENT :         VAULT   UNEVEN     FLOOR  BALANCE           TOTAL
  2|                             BARS  EXERCISE     BEAM          POINTS
  3|----------------------------------------------------------------------
  4|KATHY                0.0      0.0       0.0      0.0             0.0
  5|TIFFANY              0.0      0.0       0.0      0.0             0.0
  6|SHANNON              0.0      0.0       0.0      0.0             0.0
  7|VICKI                0.0      0.0       0.0      0.0             0.0
  8|STEPHANIE            0.0      0.0       0.0      0.0             0.0
  9|TAYAH                0.0      0.0       0.0      0.0             0.0
 10|CAROLYN-ANN          0.0      0.0       0.0      0.0             0.0
 11|======================================================================
 12|
 13|AVERAGE              0.0      0.0       0.0      0.0             0.0
 14|HIGH                 0.0      0.0       0.0      0.0             0.0
 15|LOW                  0.0      0.0       0.0      0.0             0.0
 16|
 17|
 18|
--------------------------------------------------------------------------
F1: (Label, Layout-R) TOTAL

Type entry or use @ commands                                  @-? for Help
```

15. Enter some new scores. Note cells that are recalculated.

16. Do not save this file unless you change the name or save to a different disk. We will be using the original TEAM SCORES file in Activity 6.

## PART 5: COPYING BETWEEN SPREADSHEET FILES (Open-Apple C) (Copying a Block of Information)

If we use the Clipboard, we can copy a Block of spreadsheet cells into the same spreadsheet or from one to another. This time we will create a new (empty) spreadsheet, place a copy of the TEAM SCORES template spreadsheet on the Clipboard, then move this copy into the *new* spreadsheet.

1. Escape to the Main Menu.
2. Select: 1. Add Files to the Desktop ........................................ press **RETURN**
3. Select: 5. Make a new file for Spreadsheet ............................... press **RETURN**
4. Select: 1. From Scratch ...................................................... press **RETURN**

5. For filename, type: TEMPLATE.SCORES.............................. press **RETURN**

6. You should now have an *empty* spreadsheet on the screen.

**To Copy to the Clipboard:**

7. Press Open-Apple Q (for Quick Switch).

8. Select: TEAM SCORES .................................................. press **RETURN**

9. Move the cursor to cell A1.

10. Press Open-Apple C (to Copy).

11. Select: To Clipboard.

12. Select: Block.

13. Again use the Arrow keys to highlight rows 1 through 15, columns A through F.

14. Press Return.

The spreadsheet on the Clipboard has now been replaced by this new one.

**To Copy from the Clipboard:**

15. Press Open-Apple Q.

16. Select: TEMPLATE SCORES ............................................ press **RETURN**

17. Press Open-Apple M (to Move).

18. Select: From clipboard.

19. Select: Formulas and values.

A copy of your spreadsheet template will now be in this file.

> **NOTE**: When you pressed Open-Apple M (to Move) you *removed* the spreadsheet information from the clipboard. To *leave* a copy on the clipboard and paste one in the new spreadsheet, you would press Open-Apple C (to Copy), as we did in Part 3.

20. Move the cursor around to note the formulas, label and value formats, and column widths.

21. When done, escape to the Main Menu and save both spreadsheet files on your data disk.

# ACTIVITY 6
# TRANSFERRING SPREADSHEET INFORMATION TO A WORD PROCESSOR DOCUMENT

Transferring labels, values, and formulas between spreadsheets via the Clipboard is a very simple process. You can also use the *AppleWorks* Clipboard to transfer spreadsheet information into a word processor document. This process involves ***printing*** a spreadsheet report onto the Clipboard, and then copying (or moving) it into the word processor.

When ***printing*** spreadsheet information to the Clipboard the spreadsheet column and row ***format*** is transferred to the word processor document. How information is displayed in the spreadsheet can also appear in a word processor document. Merely copying (or moving) spreadsheet information to a word processor file is possible—but columns and rows will adjust to the tab settings within the word processor document.

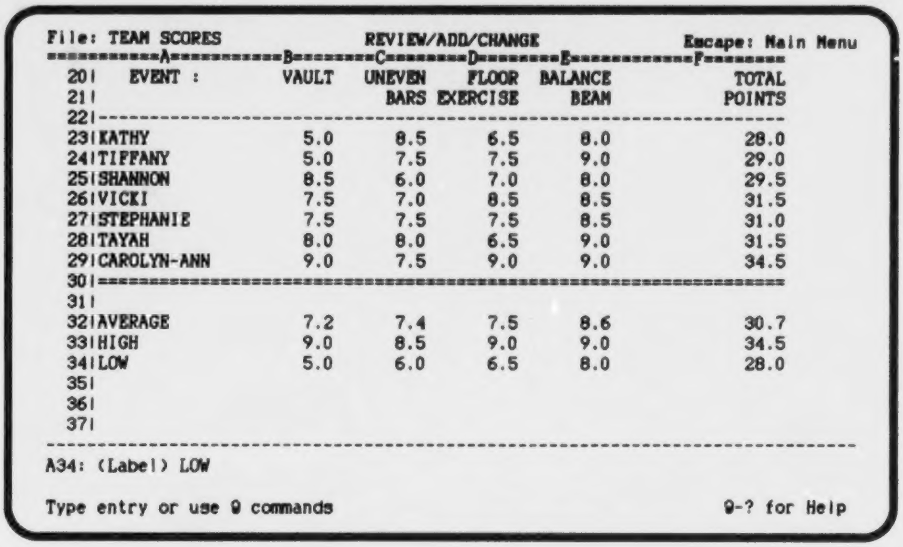
The girls' gymnastics coach would like to have the results of the first gymnastics meet included in the school newsletter from Chapter 2. The individual and team results are in the *AppleWorks* spreadsheet file, TEAM SCORES. We will switch to this file, take a look at how spreadsheet printer options are displayed, and then print a copy of the spreadsheet through the Clipboard to the SCHOOL NEWS word processor file.

## PART 1: ADDING SEVERAL FILES TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop........................................ press **RETURN**
3. Select: 1. From the Current Disk ................................................press **RETURN**
4. Select: --> TEAM SCORES
   --> SCHOOL NEWS
5. Press Return.
6. Press Open-Apple Q.

The files you have added are listed on the screen under Desktop Index.

7. Select TEAM SCORES .................................................... press **RETURN**
8. A gymnastics team spreadsheet should be on the screen.
9. Use the Down Arrow key to display rows 20 through 34 — the rows you copied in Activity 5.



```
File: TEAM SCORES                 REVIEW/ADD/CHANGE                Escape: Main Menu
===========A===========B========C========D========E============F========
  20|   EVENT :          VAULT  UNEVEN    FLOOR  BALANCE         TOTAL
  21|                             BARS EXERCISE     BEAM        POINTS
  22|-------------------------------------------------------------------
  23|KATHY                 5.0     8.5      6.5      8.0          28.0
  24|TIFFANY               5.0     7.5      7.5      9.0          29.0
  25|SHANNON               8.5     6.0      7.0      8.0          29.5
  26|VICKI                 7.5     7.0      8.5      8.5          31.5
  27|STEPHANIE             7.5     7.5      7.5      8.5          31.0
  28|TAYAH                 8.0     8.0      6.5      9.0          31.5
  29|CAROLYN-ANN           9.0     7.5      9.0      9.0          34.5
  30|===================================================================
  31|
  32|AVERAGE               7.2     7.4      7.5      8.6          30.7
  33|HIGH                  9.0     8.5      9.0      9.0          34.5
  34|LOW                   5.0     6.0      6.5      8.0          28.0
  35|
  36|
  37|
------------------------------------------------------------------------------
A34: (Label) LOW

Type entry or use 9 commands                                     9-? for Help
```

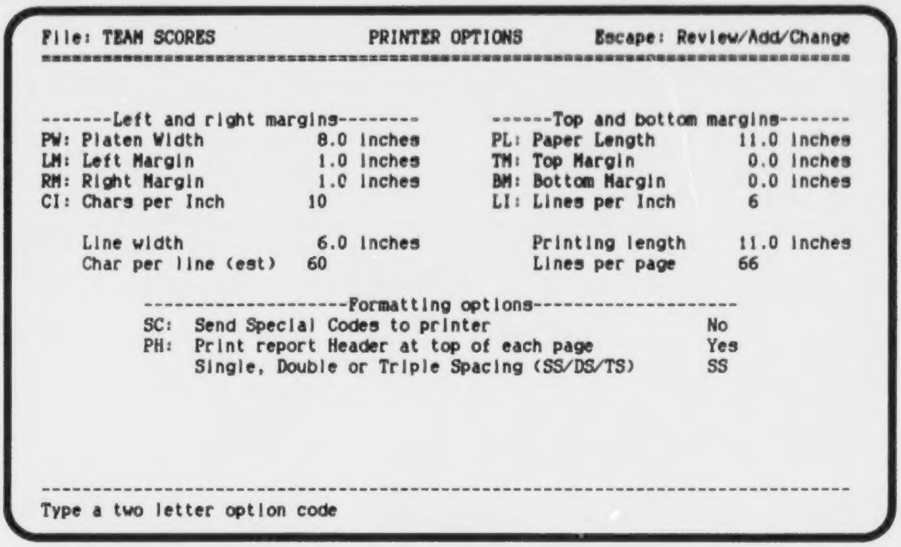
10. Move the cursor to cell A20. This cell marks the corner of the area we will *print* to the Clipboard.

## PART 2: SETTING PRINTER OPTIONS (Open-Apple O)

In Activity 2 we examined the process for printing a spreadsheet. At that time we accepted all the ***default*** printer options. Like the word processor, the Open-Apple O command displays printer options available for a spreadsheet.

1. Press Open-Apple O (for Printer Options).

The spreadsheet printer options menu has fewer settings than the word processor's.



```
File: TEAM SCORES              PRINTER OPTIONS       Escape: Review/Add/Change
==============================================================================


-------Left and right margins--------       ------Top and bottom margins-------
PW: Platen Width            8.0 inches      PL: Paper Length        11.0 inches
LM: Left Margin             1.0 inches      TM: Top Margin           0.0 inches
RM: Right Margin            1.0 inches      BM: Bottom Margin        0.0 inches
CI: Chars per Inch         10               LI: Lines per Inch       6

    Line width              6.0 inches          Printing length     11.0 inches
    Char per line (est)    60                   Lines per page      66

          --------------------Formatting options--------------------
          SC:  Send Special Codes to printer                      No
          PH:  Print report Header at top of each page            Yes
               Single, Double or Triple Spacing (SS/DS/TS)        SS






------------------------------------------------------------------------------
Type a two letter option code
```

2. Note the PH (Print report Header) setting in the middle of the screen. The default setting is Yes.

We do not need the spreadsheet filename or date to appear above the team scores. We will turn this report header setting off before sending the spreadsheet to the Clipboard.

3. At the bottom of the screen, type: PH........................................ press **RETURN**
   Note: The PH setting has now switched to No.

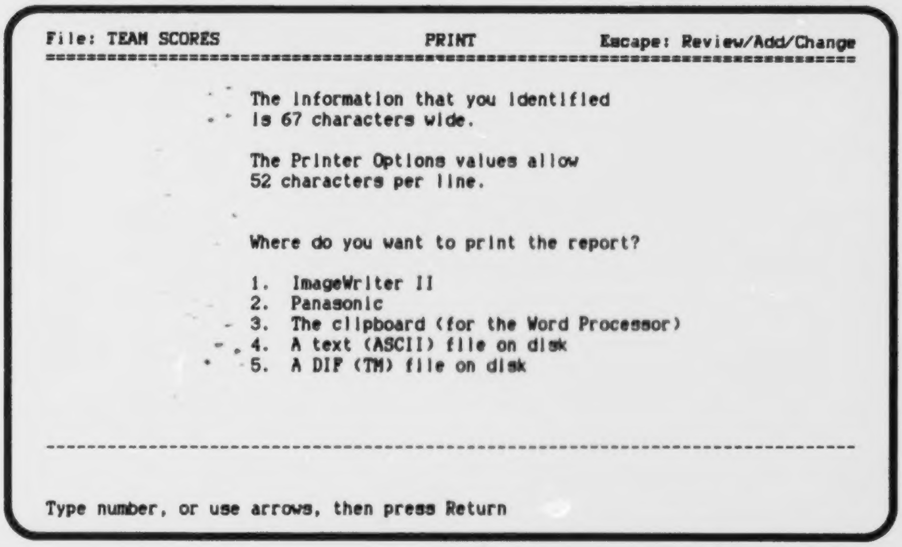
Setting margins and Characters per Inch for a spreadsheet is similar to the process we followed for a word processor file.

4. At the bottom of the screen, type: LM........................................ press **RETURN**
5. For inches type: .7............................................................... press **RETURN**
   Note: The number following *char per line* (est) has changed.
6. Type: RM.......................................................................... press **RETURN**
7. For inches type: .7............................................................... press **RETURN**
8. Type: CI............................................................................ press **RETURN**
9. For Characters type: 8......................................................... press **RETURN**
   Note: The *char per line* (est) is now showing the number 52.
10. Press Escape to return to the Review/Add/Change screen.

## PART 3: PRINTING TO THE CLIPBOARD (Open-Apple P)

To transfer information from a spreadsheet (or database) to a word processor file, Open-Apple P (to Print), not Open-Apple C (to Copy) is used.

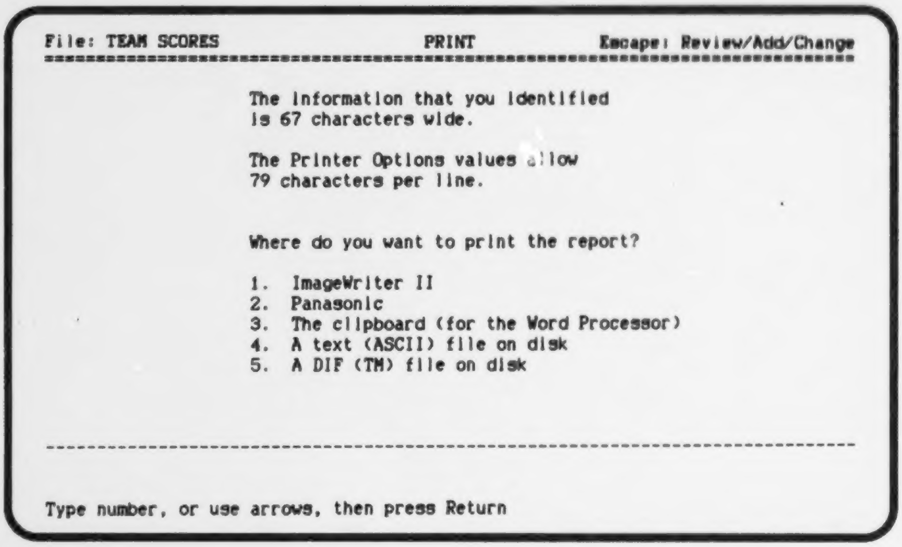
1. Have the cursor positioned in the upper left-hand corner of the block (A20).
2. Press Open-Apple P.
3. Select: Block.
4. Highlight columns A through F and rows 20 through 34. ............... press **RETURN**
   Note the message on the screen:



```
File: TEAM SCORES                    PRINT            Escape: Review/Add/Change
===============================================================================

                        The information that you identified
                        is 67 characters wide.

                        The Printer Options values allow
                        52 characters per line.


                        Where do you want to print the report?

                        1.  ImageWriter II
                        2.  Panasonic
                        3.  The clipboard (for the Word Processor)
                        4.  A text (ASCII) file on disk
                        5.  A DIF (TM) file on disk



-------------------------------------------------------------------------------

Type number, or use arrows, then press Return
```

> **NOTE**: With the current printer option settings, 52 characters per line will be printed—to the Clipboard or printer. *Information beyond 52 characters will not be included.* If we want all 67 characters in each line to be included we can either decrease the margins, or increase the characters per inch setting.

5. Press Escape to return to the spreadsheet.
6. Press Open-Apple O. Change the CI setting to 12.
7. Press Escape.
8. Repeat steps 1, 2, 3, and 4 and again note the screen message:



```
File: TEAM SCORES                    PRINT            Escape: Review/Add/Change
================================================================================

                         The information that you identified
                         is 67 characters wide.

                         The Printer Options values allow
                         79 characters per line.


                         Where do you want to print the report?

                         1.  ImageWriter II
                         2.  Panasonic
                         3.  The clipboard (for the Word Processor)
                         4.  A text (ASCII) file on disk
                         5.  A DIF (TM) file on disk


--------------------------------------------------------------------------------

Type number, or use arrows, then press Return
```

By increasing the characters per inch setting the entire gymnastics team spreadsheet can be printed. With *AppleWorks* you can choose to print from four to 24 characters per inch, depending upon the capability of your printer. To complete this *print to the Clipboard* process, continue with Part 4.

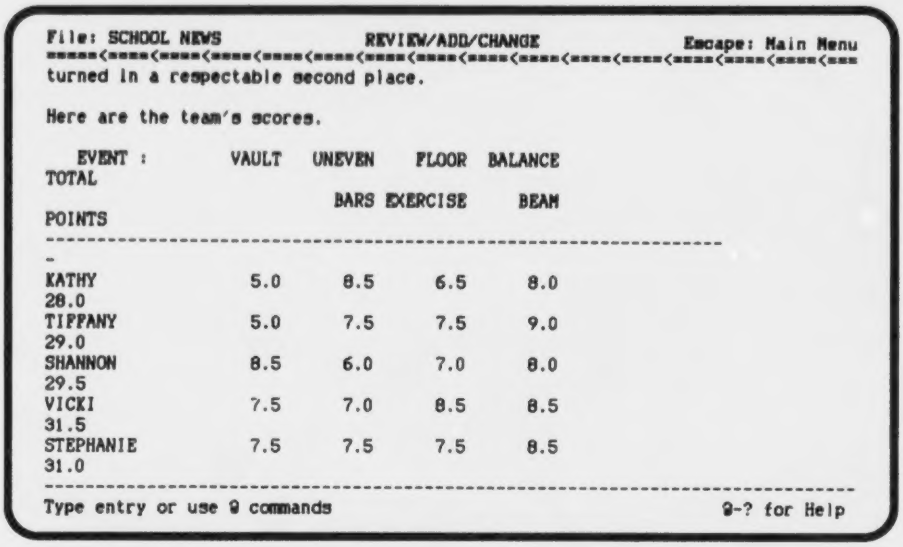
## PART 4: COPYING SPREADSHEET INFORMATION INTO A WORD PROCESSOR FILE

1. Select: The clipboard (for the Word Processor)
2. Press Return.

A message will indicate that the spreadsheet report is on the Clipboard.

3. Press the Space Bar key.
4. Press Open-Apple Q, highlight the SCHOOL NEWS file, and press Return.
5. Move the cursor below the Gymnastic Team article.
6. Press Open-Apple M (for Move).
7. Select: From clipboard (paste) .............................................. press **RETURN**

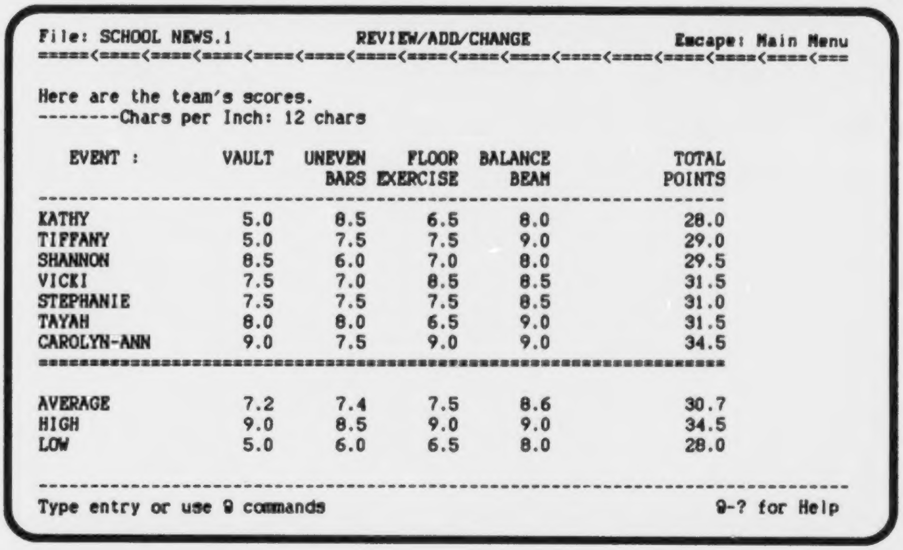
A copy of the spreadsheet has been transferred into the word processor file . . . but the layout appears different:



```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE                Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
turned in a respectable second place.

Here are the team's scores.

   EVENT :           VAULT   UNEVEN     FLOOR  BALANCE
TOTAL
                                BARS EXERCISE     BEAM
POINTS
-----------------------------------------------------------------
-
KATHY                  5.0      8.5       6.5      8.0
28.0
TIFFANY                5.0      7.5       7.5      9.0
29.0
SHANNON                8.5      6.0       7.0      8.0
29.5
VICKI                  7.5      7.0       8.5      8.5
31.5
STEPHANIE              7.5      7.5       7.5      8.5
31.0
-------------------------------------------------------------------------------
Type entry or use @ commands                                        @-? for Help
```

This word processor file is set for 10 characters per inch. This setting affects the spreadsheet text, which is ***wrapping*** and appears double spaced.

8. With the cursor on a blank line above the word EVENT, set the Characters per Inch: to 12.
9. By changing this setting, a complete spreadsheet row will fit on one word processed line.
10. Note that the column format is not affected by the tab settings in the document. Column format was transferred when spreadsheet information was printed to the Clipboard:



```
File: SCHOOL NEWS.1            REVIEW/ADD/CHANGE                Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===

Here are the team's scores.
--------Chars per Inch: 12 chars

   EVENT :           VAULT   UNEVEN     FLOOR  BALANCE              TOTAL
                                BARS EXERCISE     BEAM             POINTS
-----------------------------------------------------------------------
KATHY                  5.0      8.5       6.5      8.0               28.0
TIFFANY                5.0      7.5       7.5      9.0               29.0
SHANNON                8.5      6.0       7.0      8.0               29.5
VICKI                  7.5      7.0       8.5      8.5               31.5
STEPHANIE              7.5      7.5       7.5      8.5               31.0
TAYAH                  8.0      8.0       6.5      9.0               31.5
CAROLYN-ANN            9.0      7.5       9.0      9.0               34.5
=======================================================================

AVERAGE                7.2      7.4       7.5      8.6               30.7
HIGH                   9.0      8.5       9.0      9.0               34.5
LOW                    5.0      6.0       6.5      8.0               28.0

-------------------------------------------------------------------------------
Type entry or use @ commands                                        @-? for Help
```

11. To check your work, print the last page only.

12. Again save this SCHOOL NEWS file.

If interested, return to the TEAM SCORE file and this time copy the spreadsheet information to the clipboard. Switch back to the SCHOOL NEWS file and copy from the clipboard. Compare the results. Do not save the results.

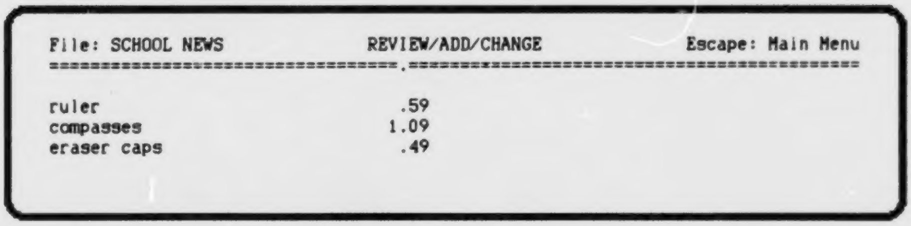
# ACTIVITY 7
# TRANSFERRING WORD PROCESSOR INFORMATION TO A SPREADSHEET FILE

Thus far we have examined the following methods for sharing information:

- Copying labels, values, and formulas *within* the same spreadsheet;
- Copying labels, values, and formulas *to another* spreadsheet via the Clipboard; and
- Transferring formatted spreadsheet information *into a word processor* document by printing to the Clipboard.

*AppleWorks 3.0* also allows us to copy information from a word processor document to a spreadsheet file. The SCHOOL NEWS word processor file contains item and price information for the "soon to be open" school store. This information can be copied to the Clipboard and quickly added to a new spreadsheet.

1. Return to the Main Menu and add a new spreadsheet file: SCHOOL STORE.
2. Switch to the SCHOOL NEWS file and locate the School Store article within the file.
3. Zoom in and note how the values have been positioned with a Tab Stop (in this case a decimal tab):

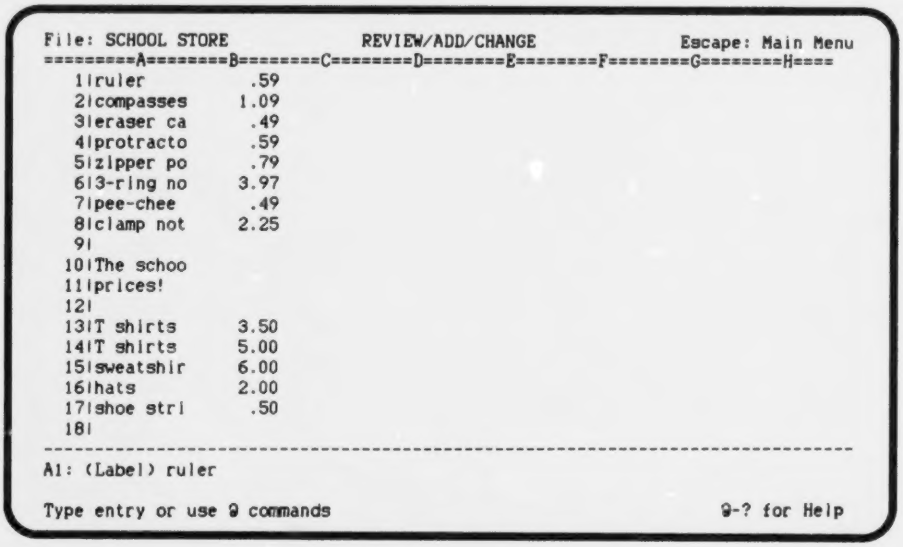


```
File: SCHOOL NEWS              REVIEW/ADD/CHANGE             Escape: Main Menu
================================.=========================================

ruler                          .59
compasses                     1.09
eraser caps                    .49
```

> **NOTE**: In order for the spreadsheet to correctly position information in columns, the word processor must organize information into columns and rows, using the Tab and Return keys.

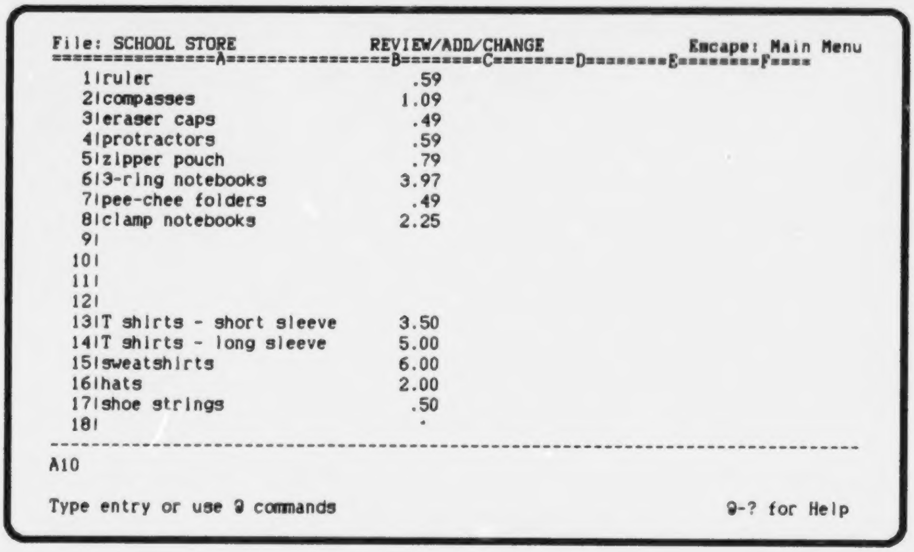
4. Place the cursor at the beginning of the line containing information on rulers.

5. Press Open-Apple C.
6. Select: To clipboard.
7. Highlight all school store item, through shoe strings .................... press **RETURN**
8. Switch to the SCHOOL STORE file.
9. With the cursor on cell A1, copy information from the Clipboard.
10. Note how information is displayed in column A:



```
File: SCHOOL STORE            REVIEW/ADD/CHANGE            Escape: Main Menu
=========A=========B=========C=========D=========E=========F=========G=========H====
   1|ruler          .59
   2|compasses     1.09
   3|eraser ca      .49
   4|protracto      .59
   5|zipper po      .79
   6|3-ring no     3.97
   7|pee-chee       .49
   8|clamp not     2.25
   9|
  10|The schoo
  11|prices!
  12|
  13|T shirts      3.50
  14|T shirts      5.00
  15|sweatshir     6.00
  16|hats          2.00
  17|shoe stri      .50
  18|
--------------------------------------------------------------------------------
A1: (Label) ruler

Type entry or use 9 commands                                      9-? for Help
```

11. Use the layout command to adjust the column width.
12. Blank out unnecessary information in rows 10 and 11.



```
File: SCHOOL STORE              REVIEW/ADD/CHANGE                Escape: Main Menu
================A=================B========C========D========E========F====
   1|ruler                     .59
   2|compasses                1.09
   3|eraser caps               .49
   4|protractors               .59
   5|zipper pouch              .79
   6|3-ring notebooks         3.97
   7|pee-chee folders          .49
   8|clamp notebooks          2.25
   9|
  10|
  11|
  12|
  13|T shirts - short sleeve  3.50
  14|T shirts - long sleeve   5.00
  15|sweatshirts              6.00
  16|hats                     2.00
  17|shoe strings              .50
  18|                          .
--------------------------------------------------------------------------------
A10

Type entry or use @ commands                                       @-? for Help
```

13. Headings and further inventory information could now be included in this file.

# ACTIVITY 8
# A REVIEW OF SPREADSHEET FEATURES

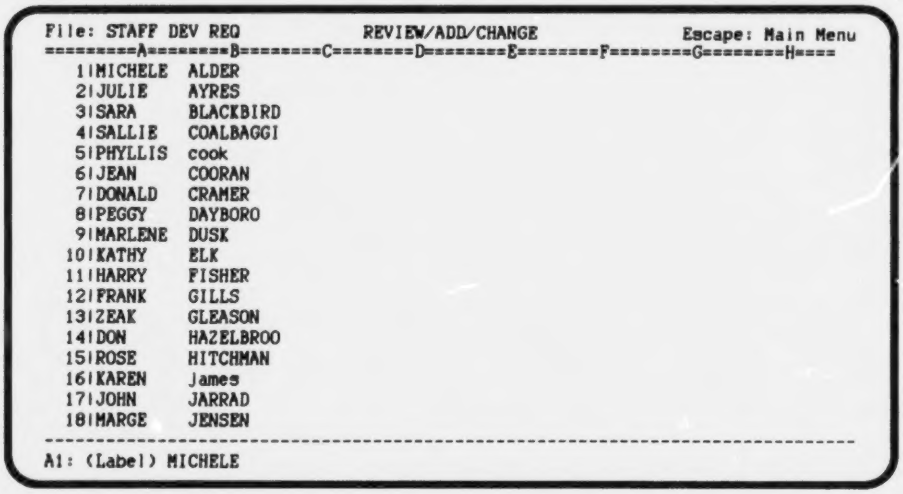
At this point the major spreadsheet features have been introduced. This next activity will serve as a review for many of these features, and as a further opportunity to work through the steps in setting up, formatting, and testing a spreadsheet.

In this activity you will begin with the file, STAFF DEV REQ. This file contains the first and last names for the 34 teachers you will work with within several of the activities in the database chapter. In fact, the last activity in Chapter 5 involves transferring these teachers' names to a spreadsheet file. In the process you will create your own STAFF DEV REQ file.

If you would like to continue working with the spreadsheet, proceed to Part 1. However, if you would like to now begin examining the *AppleWorks* database, you may move on to Chapter 5. At the end of that chapter you will have an opportunity to return to this activity and review spreadsheet features.

## PART 1: ADDING A SPREADSHEET FILE TO THE DESKTOP

1. Press the Escape key and begin at the Main Menu.
2. Select: Add Files to the Desktop ........................................... press **RETURN**
3. Select: 1. From the Current Disk ........................................... press **RETURN**
4. Select: --> STAFF DEV REQ ............................................. press **RETURN**
5. The following spreadsheet should now be on the screen:



```
File: STAFF DEV REQ           REVIEW/ADD/CHANGE            Escape: Main Menu
=========A========B========C========D========E========F========G========H====
    1|MICHELE  ALDER
    2|JULIE    AYRES
    3|SARA     BLACKBIRD
    4|SALLIE   COALBAGGI
    5|PHYLLIS  cook
    6|JEAN     COORAN
    7|DONALD   CRAMER
    8|PEGGY    DAYBORO
    9|MARLENE  DUSK
   10|KATHY    ELK
   11|HARRY    FISHER
   12|FRANK    GILLS
   13|ZEAK     GLEASON
   14|DON      HAZELBROO
   15|ROSE     HITCHMAN
   16|KAREN    James
   17|JOHN     JARRAD
   18|MARGE    JENSEN
-----------------------------------------------------------------------------
A1: (Label) MICHELE
```

## PART 2: CHANGING COLUMN WIDTHS (Open-Apple L)

Four column widths need to be adjusted: columns A and B increased, columns C and N decreased.

To adjust column widths:

1. Have the cursor anywhere in column A.
2. Press Open-Apple L and select: Columns.
3. Highlight columns A and B ................................................ press **RETURN**
4. Select: Column Width.
5. Use the Open-Apple and Right Arrow key to increase the width by four more characters.
6. Press Return.
7. Use Open-Apple L to *decrease* column C to one character. Repeat for column N.

## PART 3: INSERTING ROWS (Open-Apple I)

Additional rows are needed for entering column headings.

1. Move the cursor to row 1.
2. Press Open-Apple I (to Insert).
3. For number of rows to insert, type: 8...................................... press **RETURN**

## PART 4: SETTING A STANDARD FORMAT FOR LABELS AND VALUES (Open-Apple V)

You have learned how to adjust the layout for label and value entries using the Open-Apple L (Layout) command. With this command a specific layout could be set up for one or more cells, columns or rows (e.g., label entries centered, value entries displayed with two decimal places). You have also worked with the *AppleWorks* command for setting a standard format that applies *throughout* the entire spreadsheet. **(Refer to page 84 for an example of the completed spreadsheet)**

1. Press Open-Apple V (for Standard Value).
2. For standards, select: Label format.
3. For label format, select: Right Justify.
   The teachers' names now appear right-justified in the cells. All new label entries will also have this format.

Now for the Value format.

4. Again press Open-Apple V.
5. For standards, select: Value format.
6. For value format, select: Dollars.
7. For number of decimal places, press Return to accept the zero.
All value entries will now appear with dollar signs and decimal points.

## PART 5: SETTING THE LOCAL LAYOUT (Open-Apple L)

The standard format applies throughout the spreadsheet, but we can still use Open-Apple L to set up a local layout for a few cells. For this spreadsheet, column headings look best right-justified but the teachers' names should be left-justified.

1. Move the cursor to column A.
2. Press Open-Apple L and select: Columns.
3. Use the cursor to highlight Columns A and B.
4. Press Return.
5. For layout, select: Label format to be Left Justified.

Entries in columns D and F will display the number of sub days a teacher has requested for program planning. The standard value setting will *not* be appropriate in these two columns.

6. Move the cursor to cell D9.
7. Enter the number 3. After pressing Return note the $3 entry.

**NOTE**: Even if you have set up a standard format for your spreadsheet, you can still format certain rows, columns, a single entry, or a block of cells in a different format.

To make sure your Open-Apple L (Local) formatting will apply to entries you will make later, you will need to format a *block* rather than a row or column.

- Formatting a *row* or *column* applies to every value now there, but *does not* affect any values you enter later.
- When you format the cells in the current *entry,* or in a *block* of entries, the formatting does apply to existing and future value entries.

8. Press Open-Apple L and select: Block.
9. Use the Down Arrow key to highlight this column, rows 9 through 42.
10. Press Return.
11. For layout, select: Value format.
12. For value format, select: fixed with one decimal place.
    Note how the value in cell D9 now appears.
13. Move to cell F9 and repeat steps 8 through 12.

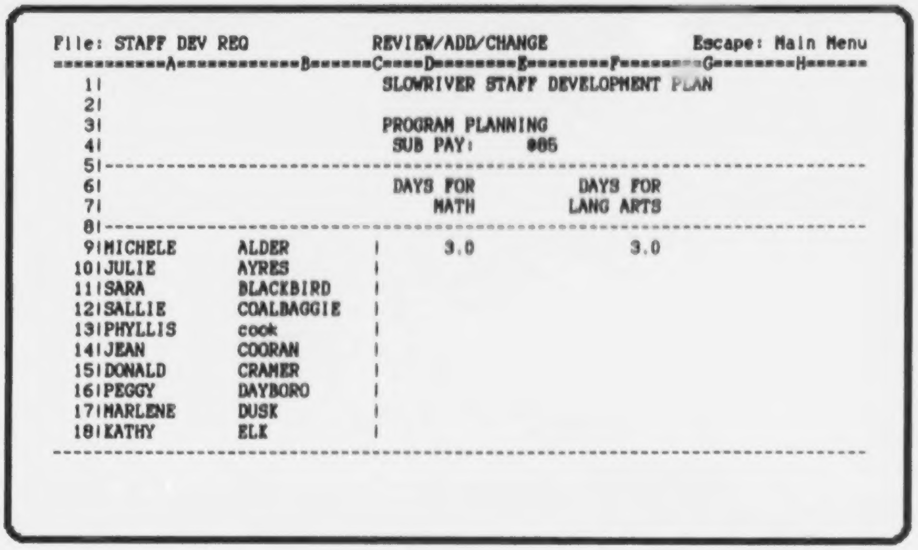
## PART 6: ENTERING A LINE OF CHARACTERS

Next we will add dashes and lines to create borders.

1. In cell A5 enter repeated dashes ( ------- ) and press Return.
   (Hint: First press Shift and type a Quotation Mark to indicate a label cell.)
2. Use Open-Apple C to copy the repeated dashes into columns B through M.
3. Next copy repeated dashes in row 8, columns A through M.
   (Hint: use cell A5 as the *source*, and cells A8 through M8 as the *destination*.)
4. Enter repeated equal signs ( ===== ) in row 44, columns A through M.
5. In cell C9 enter a vertical line ( | ). It's located on the key above the Return key on the Apple IIe and the Apple IIc; on the IIGS it's located to the right of the Space Bar.
6. Copy this label into C10 through C43.
7. Copy this vertical line into column N, rows 5 through 43.

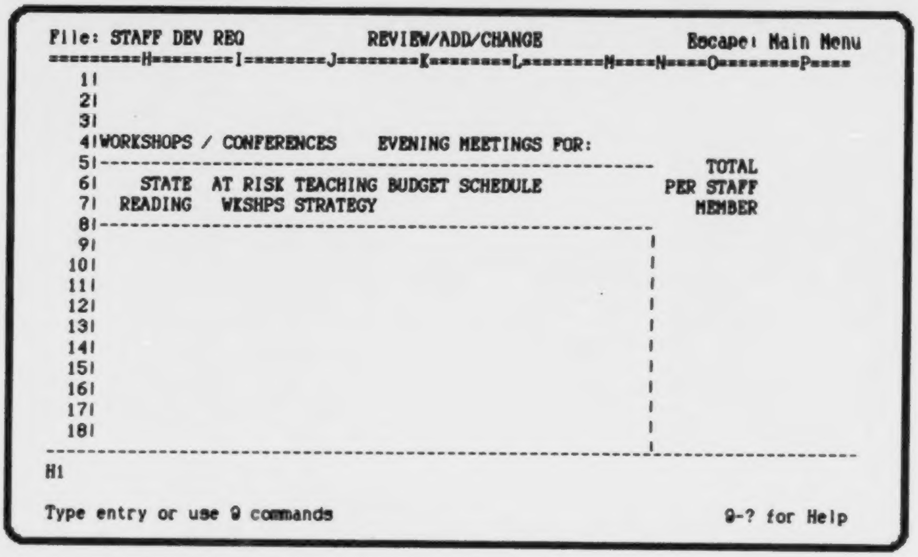
## PART 7: ENTERING SPREADSHEET HEADINGS

1. For columns D through G, enter the following labels in rows 1,3,4, 6, and 7.
2. When entering the value in cell E4, let the standard format setting take care of the dollar sign and decimal places.



```
File: STAFF DEV REQ           REVIEW/ADD/CHANGE            Escape: Main Menu
===========A============B======C====D========E========F========G========H======
    1|                            SLOWRIVER STAFF DEVELOPMENT PLAN
    2|
    3|                            PROGRAM PLANNING
    4|                             SUB PAY:     $65
    5|-------------------------------------------------------------------------
    6|                             DAYS FOR          DAYS FOR
    7|                                 MATH          LANG ARTS
    8|-------------------------------------------------------------------------
    9|MICHELE     ALDER        |       3.0               3.0
   10|JULIE       AYRES        |
   11|SARA        BLACKBIRD    |
   12|SALLIE      COALBAGGIE   |
   13|PHYLLIS     cook         |
   14|JEAN        COORAN       |
   15|DONALD      CRAMER       |
   16|PEGGY       DAYBORO      |
   17|MARLENE     DUSK         |
   18|KATHY       ELK          |
------------------------------------------------------------------------------
```

3. For columns H through O, enter the following labels in rows 4, 6, and 7.



```
File: STAFF DEV REQ           REVIEW/ADD/CHANGE           Escape: Main Menu
=========H=========I=========J=========K=========L=========M=====N=====O=========P=====
    1|
    2|
    3|
    4|WORKSHOPS / CONFERENCES    EVENING MEETINGS FOR:
    5|--------------------------------------------------------        TOTAL
    6|    STATE  AT RISK TEACHING BUDGET SCHEDULE                 PER STAFF
    7|  READING   WKSHPS STRATEGY                                     MEMBER
    8|--------------------------------------------------------
    9|                                                        |
   10|                                                        |
   11|                                                        |
   12|                                                        |
   13|                                                        |
   14|                                                        |
   15|                                                        |
   16|                                                        |
   17|                                                        |
   18|                                                        |
-------------------------------------------------------------------------------
H1

Type entry or use 9 commands                                      9-? for Help
```

4. In cell A46 enter, TOTAL PER COLUMN:
   Don't worry if this entry runs into column B.

## PART 8: ENTERING FORMULAS AND MAKING RELATIVE COPIES (Open-Apple C)

We will use this spreadsheet to calculate the total staff development expenditures for each category and individual staff member. We will use @SUM functions.

1. In cell D46 enter: @SUM(D8.D44)
   Note that this function includes a row *above* and *below* the area where values will be entered.
2. Ignore the standard value format for a moment.
3. Make a *relative* copy of this formula into cells E46 through O46.
4. Now use Open-Apple L to change the format in cell D46 (the total days for math) to fixed with one decimal point.
5. Also set the format in cell F46 (the total days for language arts) the same way.
6. In cell O9 enter: @SUM(E9.M9)-F9. This formula will total all dollar amount requests and exclude the two columns containing sub day requests (columns D and F).
7. Make a *relative* copy of this formula into cells O10 through O42.

## PART 9: ENTERING FORMULAS AND MAKING RELATIVE/NO CHANGE COPIES (Open-Apple C)

We need formulas to calculate the amount it will cost to hire substitute teachers while teachers are involved in program planning for math and/or language arts.

1. In cell E9 enter: +D9*E4 (number of days for math planning multiplied by sub pay).
2. Press Return.
   Note the Standard Value format.
3. Enter a new number in cell D9 to make sure the formula is correct.
   Note the Local Value format.
4. Copy the formula in cell E9 into cells E10 through E42.
5. For reference to D9, select: Relative.
6. For reference to E4, select: No change. (Remember why?)
7. In cell G9 enter: +F9*E4 (number of days for language arts planning times sub pay).
8. Copy the formula in cell G9 into cells G10 through G42.
9. For reference to F9, select: Relative.

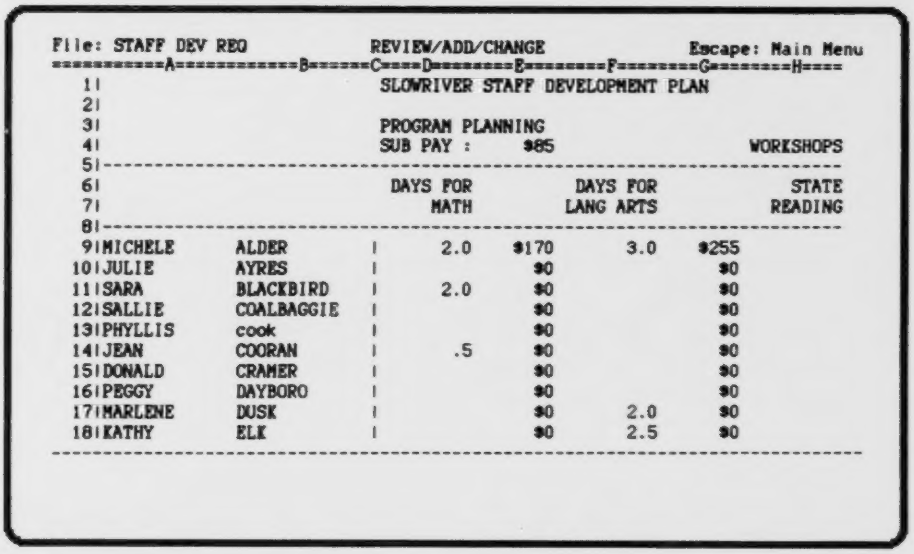
10. For reference to E4, select: No change.

## PART 10: ENTERING, RECALCULATING, AND VIEWING VALUES AND FORMULAS

1. Michele Alder has requested two days to work on math curriculum and three days for language arts. Enter these numbers in cells D9 and F9.

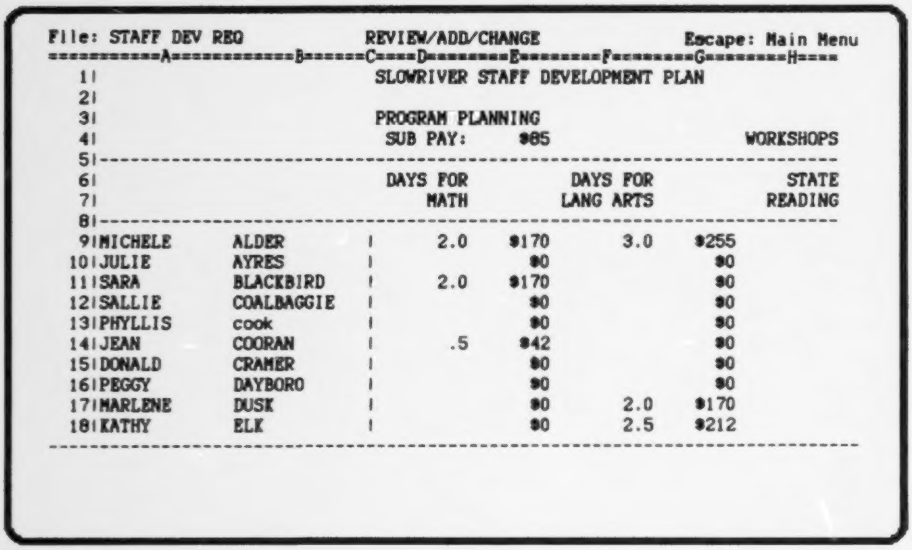
*AppleWorks* recalculates all formulas every time you add a single entry. You can postpone recalculation until you're ready, and *manually* recalculate.

2. To turn off the automatic recalculation, press Open-Apple V (for Standard Values).
3. For standards, select: Recalculate.
4. For recalculate, select: Frequency.
5. For frequency, select: Manual.
   *AppleWorks* will now recalculate formulas only when you tell it to.
6. Enter the following requests for sub days.



```
File: STAFF DEV REQ             REVIEW/ADD/CHANGE              Escape: Main Menu
===========A============B======C====D========E========F========G========H====
  1|                           SLOWRIVER STAFF DEVELOPMENT PLAN
  2|
  3|                           PROGRAM PLANNING
  4|                           SUB PAY :     $85                        WORKSHOPS
  5|------------------------------------------------------------------------
  6|                            DAYS FOR          DAYS FOR              STATE
  7|                                MATH         LANG ARTS            READING
  8|------------------------------------------------------------------------
  9|MICHELE     ALDER        |        2.0    $170       3.0    $255
 10|JULIE       AYRES        |                 $0                $0
 11|SARA        BLACKBIRD    |        2.0      $0                $0
 12|SALLIE      COALBAGGIE   |                 $0                $0
 13|PHYLLIS     cook         |                 $0                $0
 14|JEAN        COORAN       |         .5      $0                $0
 15|DONALD      CRAMER       |                 $0                $0
 16|PEGGY       DAYBORO      |                 $0                $0
 17|MARLENE     DUSK         |                 $0       2.0      $0
 18|KATHY       ELK          |                 $0       2.5      $0
-------------------------------------------------------------------------------
```

7. Press Open-Apple K ("Kalculate") to *manually* recalculate the formulas. Your spreadsheet should now display:



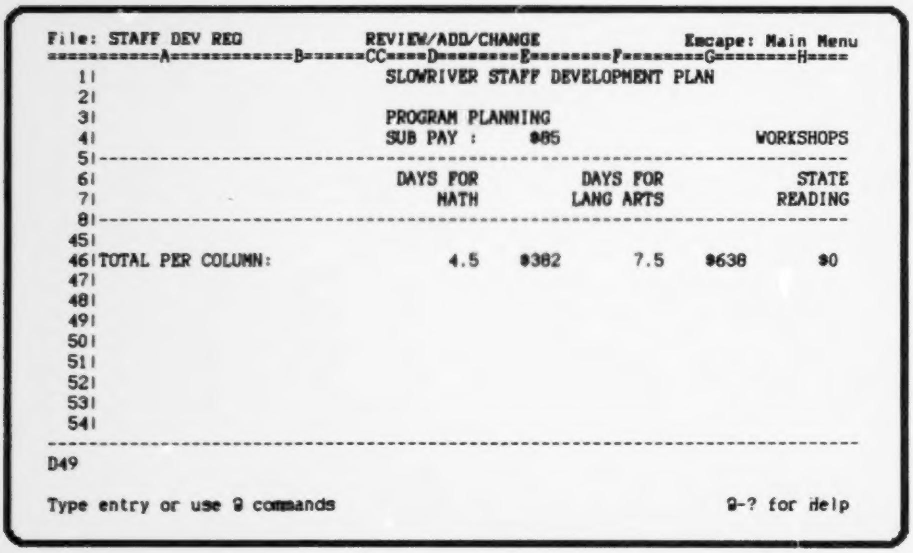
```
File: STAFF DEV REQ          REVIEW/ADD/CHANGE              Escape: Main Menu
===========A=============B======C====D========E========F========G========H====
    1|                            SLOWRIVER STAFF DEVELOPMENT PLAN
    2|
    3|                            PROGRAM PLANNING
    4|                             SUB PAY:      $85                    WORKSHOPS
    5|-------------------------------------------------------------------------
    6|                             DAYS FOR          DAYS FOR               STATE
    7|                                 MATH         LANG ARTS             READING
    8|-------------------------------------------------------------------------
    9|MICHELE      ALDER       |       2.0   $170       3.0   $255
   10|JULIE        AYRES       |               $0               $0
   11|SARA         BLACKBIRD   |       2.0   $170               $0
   12|SALLIE       COALBAGGIE  |               $0               $0
   13|PHYLLIS      cook        |               $0               $0
   14|JEAN         COORAN      |        .5    $42               $0
   15|DONALD       CRAMER      |               $0               $0
   16|PEGGY        DAYBORO     |               $0               $0
   17|MARLENE      DUSK        |               $0       2.0   $170
   18|KATHY        ELK         |               $0       2.5   $212
-------------------------------------------------------------------------------
```

8. Move the cursor to cell D9.

9. Press Open-Apple T (for Set Titles) and select: Both.

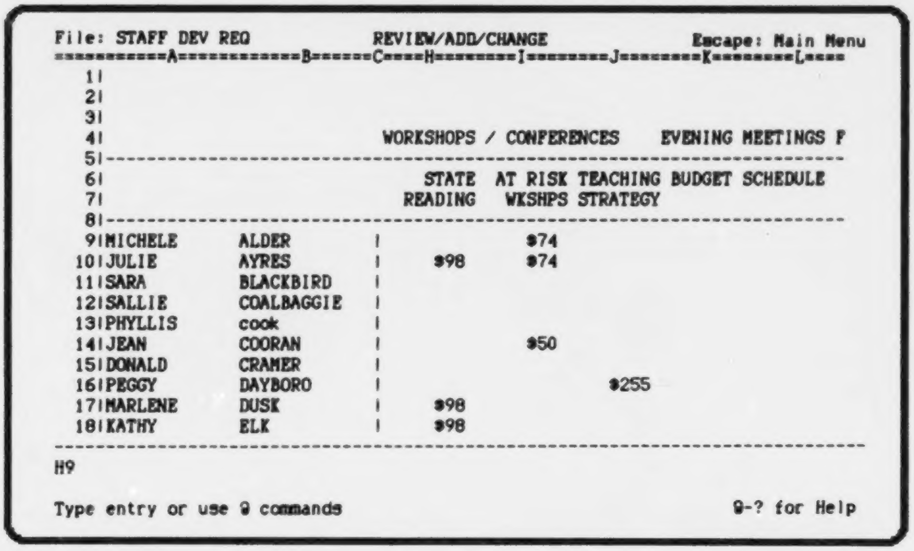
10. Press Open-Apple F to find cell Coordinates D49.

11. With top and side titles set, you should be able to view the total requested planning days and related costs to hire substitute teachers:



```
File: STAFF DEV REQ          REVIEW/ADD/CHANGE              Escape: Main Menu
===========A=============B======CC====D========E========F========G========H====
    1|                             SLOWRIVER STAFF DEVELOPMENT PLAN
    2|
    3|                             PROGRAM PLANNING
    4|                             SUB PAY :     $85                    WORKSHOPS
    5|-------------------------------------------------------------------------
    6|                              DAYS FOR          DAYS FOR              STATE
    7|                                  MATH         LANG ARTS            READING
    8|-------------------------------------------------------------------------
   45|
   46|TOTAL PER COLUMN:                  4.5   $382       7.5   $638         $0
   47|
   48|
   49|
   50|
   51|
   52|
   53|
   54|
-------------------------------------------------------------------------------
D49

Type entry or use @ commands                                    @-? for Help
```

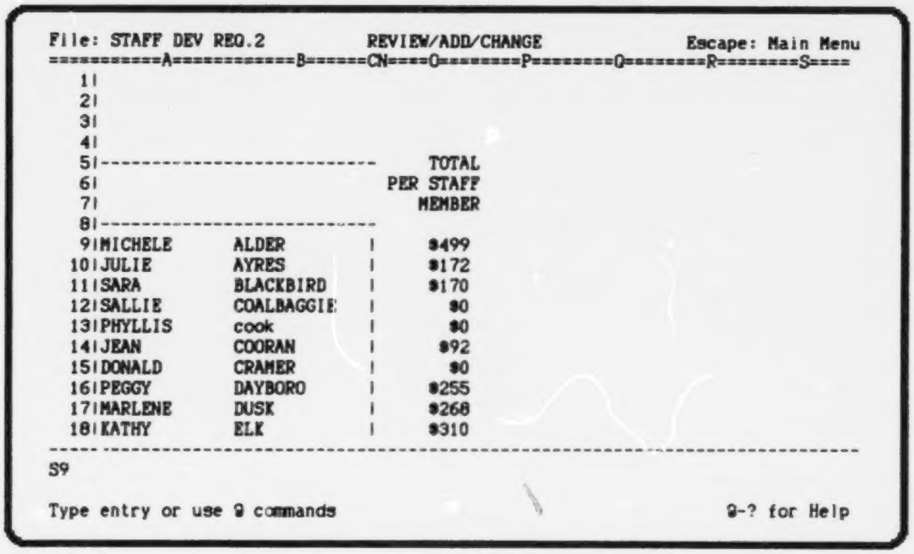
12. Move the cursor to cell H9 and enter the following workshop and conference expense requests:



```
File: STAFF DEV REQ           REVIEW/ADD/CHANGE             Escape: Main Menu
===========A============B======C====H========I========J========K========L====
   1|
   2|
   3|
   4|                         WORKSHOPS / CONFERENCES    EVENING MEETINGS F
   5|-------------------------------------------------------------------------
   6|                             STATE  AT RISK TEACHING BUDGET SCHEDULE
   7|                           READING   WKSHPS STRATEGY
   8|-------------------------------------------------------------------------
   9|MICHELE      ALDER      |              $74
  10|JULIE        AYRES      |      $98     $74
  11|SARA         BLACKBIRD  |
  12|SALLIE       COALBAGGIE |
  13|PHYLLIS      cook       |
  14|JEAN         COORAN     |              $50
  15|DONALD       CRAMER     |
  16|PEGGY        DAYBORO    |                      $255
  17|MARLENE      DUSK       |      $98
  18|KATHY        ELK        |      $98
------------------------------------------------------------------------------
H9

Type entry or use 9 commands                                      9-? for Help
```

13. Press Open-Apple K to manually recalculate the formulas.

14. Use an Arrow key to position column O next to the teachers' names and examine the total amount requested per staff member:



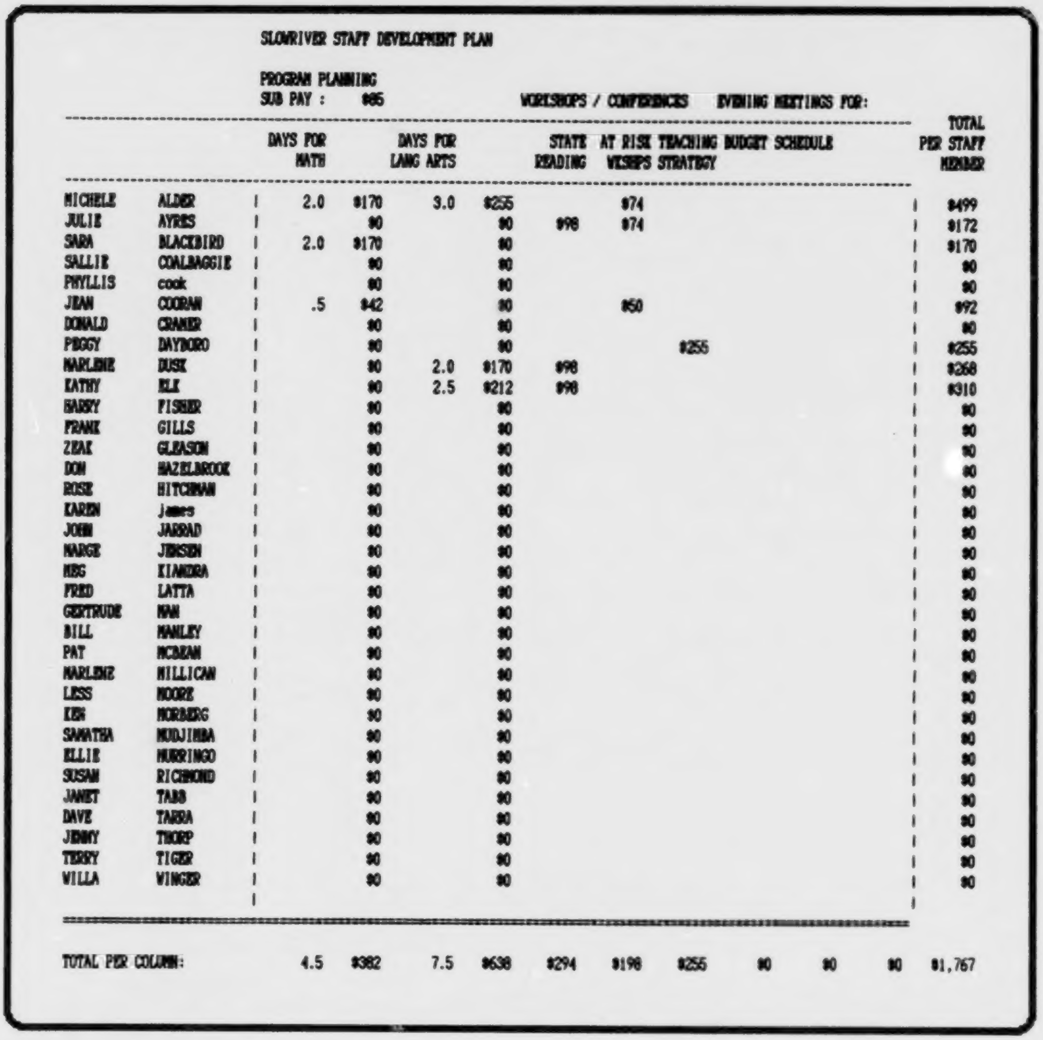
```
File: STAFF DEV REQ.2         REVIEW/ADD/CHANGE             Escape: Main Menu
===========A============B======CN====O========P========Q========R========S====
   1|
   2|
   3|
   4|
   5|--------------------------       TOTAL
   6|                              PER STAFF
   7|                                 MEMBER
   8|--------------------------
   9|MICHELE      ALDER      |        $499
  10|JULIE        AYRES      |        $172
  11|SARA         BLACKBIRD  |        $170
  12|SALLIE       COALBAGGIE |          $0
  13|PHYLLIS      cook       |          $0
  14|JEAN         COORAN     |         $92
  15|DONALD       CRAMER     |          $0
  16|PEGGY        DAYBORO    |        $255
  17|MARLENE      DUSK       |        $268
  18|KATHY        ELK        |        $310
------------------------------------------------------------------------------
S9

Type entry or use 9 commands                                      9-? for Help
```

15. Use Open-Apple F to find cell O46.
    Total staff requests thus far should be $1,767.

## PART 11: PRINTING A SPREADSHEET REPORT (Open-Apple P)

To receive a spreadsheet report we will set two printer options.

1. Press Open-Apple P and select: All.
2. Note the message on the Print menu: The spreadsheet we have set up requires 125 characters; the current printer option value is set up for 80 characters.
3. Press Escape.
4. Press Open-Apple O.
5. Change the CI setting to: 17.
   Note the characters per line setting is now up to 136.
6. Change the PH setting to: No.
7. Press Escape and again begin to print *all* of the spreadsheet.
8. Select your printer and print one copy.
9. Your report should look like this:



```
                                SLOWRIVER STAFF DEVELOPMENT PLAN

                                PROGRAM PLANNING
                                SUB PAY :    $85            WORKSHOPS / CONFERENCES   EVENING MEETINGS FOR:
-------------------------------------------------------------------------------------------------     TOTAL
                             DAYS FOR        DAYS FOR          STATE AT RISK TEACHING BUDGET SCHEDULE  PER STAFF
                                 MATH       LANG ARTS        READING  WKSHPS STRATEGY                     MEMBER
-------------------------------------------------------------------------------------------------
MICHELE     ALDER       |     2.0   $170      3.0   $255             $74                           |    $499
JULIE       AYRES       |             $0              $0     $98     $74                           |    $172
SARA        BLACKBIRD   |     2.0   $170              $0                                           |    $170
SALLIE      COALBAGGIE  |             $0              $0                                           |      $0
PHYLLIS     cook        |             $0              $0                                           |      $0
JEAN        COORAN      |      .5    $42              $0             $50                           |     $92
DONALD      CRANER      |             $0              $0                                           |      $0
PEGGY       DAYBORO     |             $0              $0                    $255                   |    $255
MARLENE     DUSK        |             $0      2.0   $170     $98                                   |    $268
KATHY       ELK         |             $0      2.5   $212     $98                                   |    $310
HARRY       FISHER      |             $0              $0                                           |      $0
FRANK       GILLS       |             $0              $0                                           |      $0
ZEAK        GLEASON     |             $0              $0                                           |      $0
DON         HAZELBROOK  |             $0              $0                                           |      $0
ROSE        HITCHMAN    |             $0              $0                                           |      $0
KAREN       james       |             $0              $0                                           |      $0
JOHN        JARRAD      |             $0              $0                                           |      $0
MARGE       JENSEN      |             $0              $0                                           |      $0
MEG         KIANDRA     |             $0              $0                                           |      $0
FRED        LATTA       |             $0              $0                                           |      $0
GERTRUDE    MAN         |             $0              $0                                           |      $0
BILL        MANLEY      |             $0              $0                                           |      $0
PAT         MCBEAN      |             $0              $0                                           |      $0
MARLENE     MILLICAN    |             $0              $0                                           |      $0
LESS        MOORE       |             $0              $0                                           |      $0
KEN         MORBERG     |             $0              $0                                           |      $0
SAMATHA     MUDJIMBA    |             $0              $0                                           |      $0
ELLIE       MURRINGO    |             $0              $0                                           |      $0
SUSAN       RICHMOND    |             $0              $0                                           |      $0
JANET       TABB        |             $0              $0                                           |      $0
DAVE        TARRA       |             $0              $0                                           |      $0
JENNY       THORP       |             $0              $0                                           |      $0
TERRY       TIGER       |             $0              $0                                           |      $0
WILLA       WINGER      |             $0              $0                                           |      $0
                        |                                                                          |
=================================================================================================

TOTAL PER COLUMN:               4.5   $382      7.5   $638    $294    $198    $255      $0      $0       $0   $1,767
```

10. Move the cursor back to cell D9 and save this spreadsheet file.

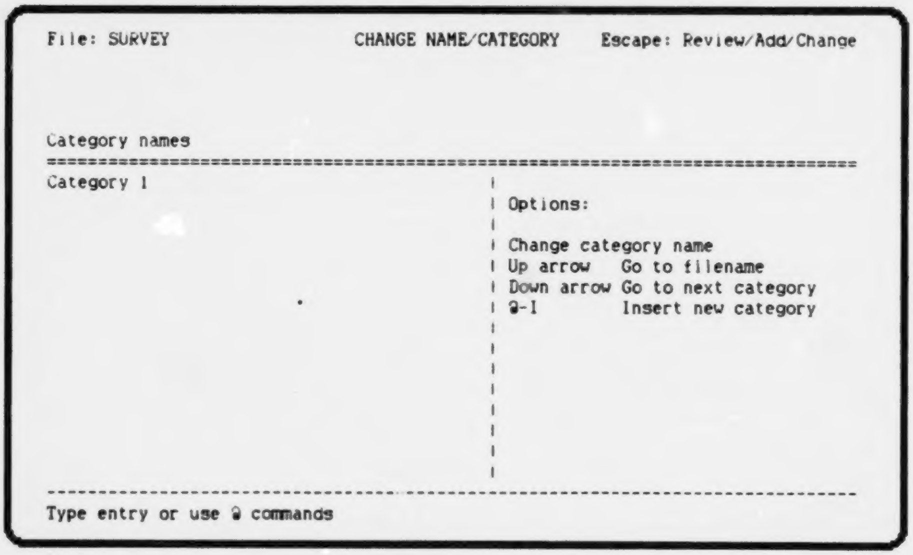
# CHAPTER FIVE

## THE DATABASE

## ACTIVITY 1
## A DATABASE OVERVIEW

### PART 1: CREATING A DATABASE FROM SCRATCH

1. Begin at the Main Menu.
2. Select: 1. Add files to the Desktop ........................................ press **RETURN**
3. Select: 4. Make a new file for the Database .............................. press **RETURN**
4. Select: 1. From scratch ...................................................... press **RETURN**
5. Type the name of your new file: SURVEY ................................ press **RETURN**
6. If prompted, place the Database Program disk in the drive............. press **RETURN**
7. The CHANGE NAME/CATEGORY menu should be on the screen:



```
File: SURVEY                  CHANGE NAME/CATEGORY    Escape: Review/Add/Change



Category names
===============================================================================
Category 1                                |
                                          | Options:
                                          |
                                          | Change category name
                                          | Up arrow   Go to filename
                                          | Down arrow Go to next category
                                          | @-I        Insert new category
                                          |
                                          |
                                          |
                                          |
                                          |
                                          |
                                          |
-------------------------------------------------------------------------------
Type entry or use @ commands
```

## PART 2: ENTERING CATEGORY NAMES

When setting up a new database, you start a file, create some categories, and then type in entries for every category. For this activity we will enter categories that could be used to survey computer workshop participants.

1. Press down the Caps Lock key. All entries will be upper case.
2. Note the cursor on "Category 1." Category names are entered here.
3. First use Open-Apple Y to erase this generic category name.

TO CORRECT TYPING ERRORS:

- Use the Up and Down Arrow keys to move between category names.
- Use Open-Apple Y to erase characters from the cursor to the end of the line.
- Use the Delete key to erase characters left of the cursor.

4. Type the following categories. Press Return after each category name.

**LAST NAME**
**FIRST NAME**
**OREGON BORN**
**YEARS IN OREGON**
**BIRTHDATE**
**TYPING**
**TEAM**
**ANIMAL**
**FOOD**
**SPORT**
**TV PROGRAM**

The *AppleWorks* database can have up to 30 categories. We have entered 11 and will now begin the second part of the set-up process.

5. Press the Escape key.

**NOTE** : You can still correct, add, or delete a category by pressing Open-Apple N (to change the Name of a category). We will examine this command later in this chapter.

## PART 3: ENTERING RECORD INFORMATION

After completing category names, information (data) for each category is entered. A ***category***, or ***field***, is one piece of information about a subject (e.g., a first name, address, favorite food). A ***record*** is all the information about that subject (e.g., a person, an item) and is the equivalent of one file card of information. A ***file*** is made up of a group of related records (e.g., all sixth grade students and their schedules of classes).

1. Press the Space Bar to begin entering record information.

The category headings will be listed on the screen.

2. Type *your* response after each category. Press Return to confirm the entry.
   a. LAST NAME.
   b. FIRST NAME.
   c. After "OREGON BORN?" indicate whether you were born in Oregon by typing either YES or NO.
   d. After "YEARS IN OREGON" type the number of years you have lived in Oregon.
   e. After "BIRTHDATE" type your birthdate. Try typing several variations: 1/3/44, 1-3-44.
   f. After "TYPING" describe your typing ability in one word.
   g. After "TEAM" type your favorite sports team.
   h. For the next four categories, name your favorites.
3. Press Return after entering your favorite TV program. A blank record will appear.
4. Have your partner complete (or make up) this second record.

The screen should display the blank third record. Our SURVEY database **file** now contains 11 (eleven) **category** names and two completed **records**.

## PART 4: VIEWING DATABASE RECORDS (Open-Apple Z)

Thus far we have been working with the database in the single-record layout: viewing ALL information for one record.

Another way to view an *AppleWorks* database is in the multiple-record layout: having information for many records on the screen.

1. Place the cursor on the LAST NAME entry.
2. Press Open-Apple Z (To Zoom).
3. You are now on the Review/Add/Change multiple-record screen.

4. Use the Up Arrow key if records one and two are not currently displayed on screen.

Both records are now displayed *horizontally* in columns and rows.

5. Again press Open-Apple Z.

Now one record is displayed on the screen. Open-Apple Z allows you to switch back and forth between single- and multiple-record Review/Add/Change screens.

6. Switch back to the **multiple-record screen**.

## PART 5: MOVING THE CURSOR

1. To move the cursor to the next column, press the Tab key. Place the cursor in the column containing first names.
2. Use the Tab key to place the cursor in each column on the first row. Note how categories move off the screen as the cursor moves from column to column.
3. Move the cursor to the last category, TV PROGRAM, to view favorite television programs.
4. Move the cursor to a previous column by pressing Open-Apple and the Tab key.

> **NOTE**: *AppleWorks* version 3.0 now allows right- and left-screen scrolling. Earlier versions had fixed, non-scrolling screens. With all category columns now available for viewing on the multiple-record screen, several additional keystokes have been added for moving between the columns.

5. To move the cursor quickly to the first category, press Open-Apple and the < key.
6. To move the cursor quickly to the last category, press Open-Apple and the > key.
7. To move the cursor left one screen, press Open-Apple and the Left Arrow key.
8. To move the cursor right one screen, press Open-Apple and the Right Arrow key.
9. Move the cursor from row to row with the Up or Down Arrow keys, or the Return key.
10. To move the cursor between the letters inside an entry, use the Right or Left arrows.

## PART 6: DELETING INFORMATION (Delete key, Open-Apple Y, Open-Apple D)

You can delete various amounts of database information, in different ways. Continue working on the **multiple-record screen.**

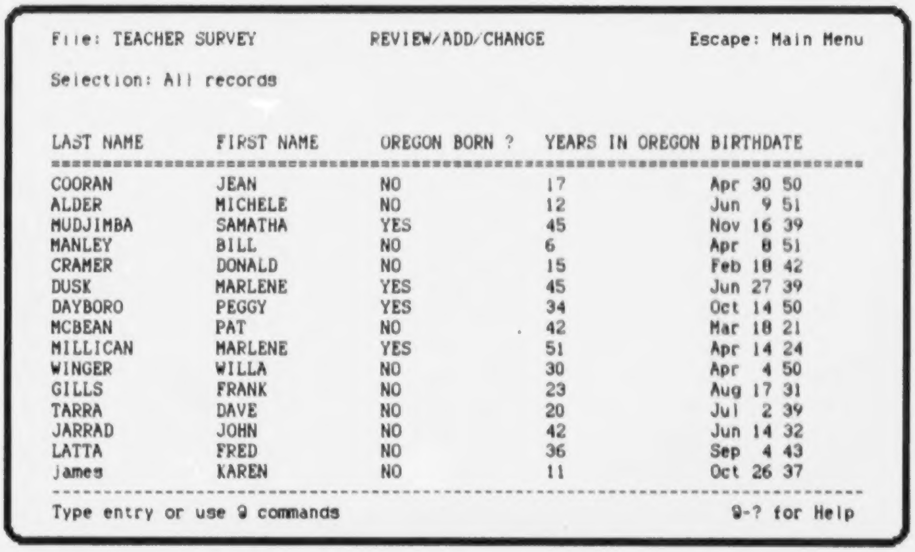
1. Change a last name entry by erasing characters to the left of the cursor using the Delete key.
2. Change a last name entry by switching to the overstrike cursor (Open-Apple E) and replacing characters by writing over them. (Then switch back.)
3. Move the cursor to a FIRST NAME category. Erase this *whole entry* by pressing Open-Apple Y or Control-Y. Re-enter another first name.
4. Erase a *row* of information by pressing Open-Apple D and Return. All information for this *entire record* has been permanently removed.

**NOTE**: To delete multiple records in the multiple-record layout, highlight a number of rows with the Arrow key, then press Return. The *last* record, however, cannot be deleted.

## PART 7: ADDING A DATABASE FILE TO THE DESKTOP

This two-record database is too small for observing the next set of features. We will work with a database that was created by teachers in another *AppleWorks* workshop.

1. Escape to the Main Menu.
2. Select: 1. Add files to the Desktop.......................................... press **RETURN**
3. Select: 1. Get files from the current disk.................................. press **RETURN**
4. Select: --> TEACHER SURVEY ........................................... press **RETURN**
5. The following database should be on the screen:



```
File: TEACHER SURVEY          REVIEW/ADD/CHANGE             Escape: Main Menu

Selection: All records


LAST NAME       FIRST NAME      OREGON BORN ?   YEARS IN OREGON BIRTHDATE
===============================================================================
COORAN          JEAN            NO              17                Apr 30 50
ALDER           MICHELE         NO              12                Jun  9 51
MUDJIMBA        SAMATHA         YES             45                Nov 16 39
MANLEY          BILL            NO              6                 Apr  8 51
CRAMER          DONALD          NO              15                Feb 18 42
DUSK            MARLENE         YES             45                Jun 27 39
DAYBORO         PEGGY           YES             34                Oct 14 50
MCBEAN          PAT             NO              42                Mar 18 21
MILLICAN        MARLENE         YES             51                Apr 14 24
WINGER          WILLA           NO              30                Apr  4 50
GILLS           FRANK           NO              23                Aug 17 31
TARRA           DAVE            NO              20                Jul  2 39
JARRAD          JOHN            NO              42                Jun 14 32
LATTA           FRED            NO              36                Sep  4 43
james           KAREN           NO              11                Oct 26 37
-------------------------------------------------------------------------------
Type entry or use 9 commands                                      9-? for Help
```

The category names you set up in Parts 1 through 3 were used for this database.

6. Before starting Part 8, practice moving the cursor between rows and columns. Switch between multiple-record and single-record layouts.

> **NOTE**: Records scroll off the top of the screen as the cursor moves down. With version 3.0, record information also scrolls left or right.

## PART 8: ARRANGING DATABASE INFORMATION BY ONE CATEGORY (Open-Apple A)

Database information can be rearranged using the Open-Apple A command.

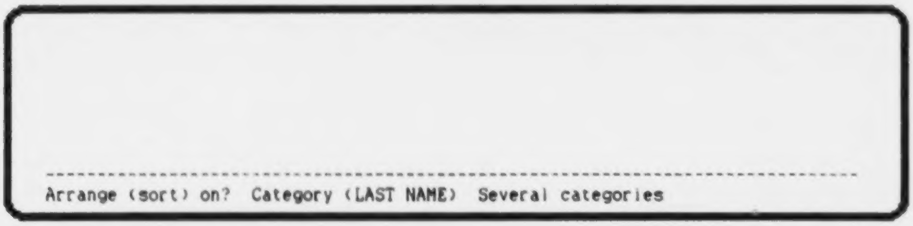
Database records, like spreadsheet records, can be arranged:

- Alphabetically,
- Numerically, or
- Chronologically.

To arrange a spreadsheet, you need to highlight the rows of information to be sorted. With the database, though, the cursor can be in the appropriate field of *any* entry. *All* database *records* will be sorted by that field.

1. Switch to Multiple-Record layout.
2. Note the information in JEAN COORAN'S record. We will keep an eye on this teacher as the database is rearranged.
3. To alphabetize all records in the database file by last name, first move the cursor to the column: LAST NAME.
4. Press Open-Apple A (to Arrange).

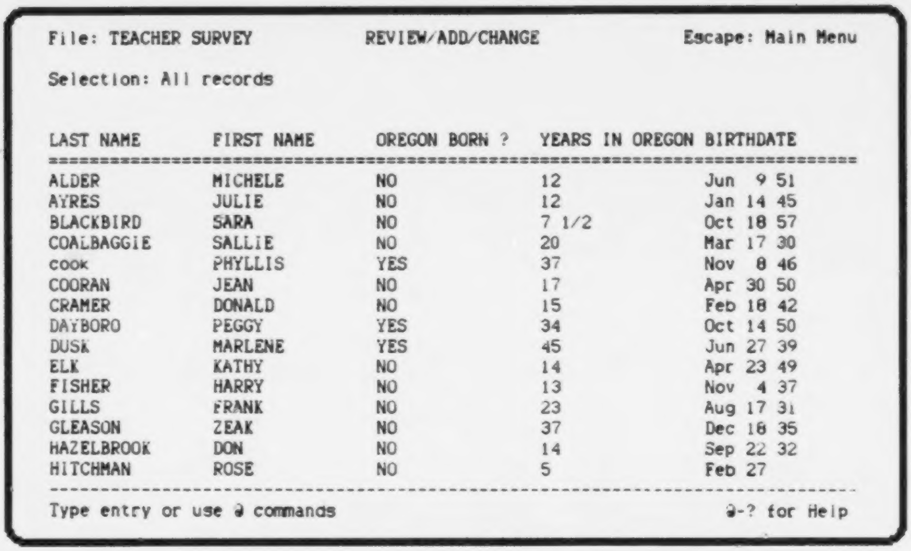
Note the new 3.0 arrangement choices at the bottom of the screen:



```
-----------------------------------------------------------------------------
Arrange (sort) on?  Category (LAST NAME)  Several categories
```

5. For Arrange (sort) on?, select: Category (LAST NAME)............... press **RETURN**
6. Select the arrangement order: From A to Z ................................ press **RETURN**
7. All records in the TEACHER SURVEY file should now be arranged alphabetically, from A to Z, by last name.

8. Move the cursor through the 34 records to check:



```
File: TEACHER SURVEY          REVIEW/ADD/CHANGE            Escape: Main Menu

Selection: All records


LAST NAME       FIRST NAME      OREGON BORN ?   YEARS IN OREGON BIRTHDATE
===============================================================================
ALDER           MICHELE         NO              12              Jun  9 51
AYRES           JULIE           NO              12              Jan 14 45
BLACKBIRD       SARA            NO              7 1/2           Oct 18 57
COALBAGGIE      SALLIE          NO              20              Mar 17 30
cook            PHYLLIS         YES             37              Nov  8 46
COORAN          JEAN            NO              17              Apr 30 50
CRAMER          DONALD          NO              15              Feb 18 42
DAYBORO         PEGGY           YES             34              Oct 14 50
DUSK            MARLENE         YES             45              Jun 27 39
ELK             KATHY           NO              14              Apr 23 49
FISHER          HARRY           NO              13              Nov  4 37
GILLS           FRANK           NO              23              Aug 17 31
GLEASON         ZEAK            NO              37              Dec 18 35
HAZELBROOK      DON             NO              14              Sep 22 32
HITCHMAN        ROSE            NO              5               Feb 27
-------------------------------------------------------------------------------
Type entry or use @ commands                                       @-? for Help
```

**NOTE**: *All* information for Jean (her name, birthdate, favorite food, etc.) was reordered in this sort. *AppleWorks* moves complete records when it arranges.

Note the entries Phyllis cook and Karen james. Although both last names were entered in lower case, they were placed in the correct order when the file was sorted. *AppleWorks* does not distinguish between upper- and lower-case letters when arranging whole words.

9. Move the cursor to the second column. Use Open-Apple A to arrange all records in this file by FIRST NAME, from Z to A.

Zeak Gleason's record should be displayed at the top of the list.

10. Find Jean's record.

Does Jean's record still contain all her information? Check the single-record layout, then switch back to the multiple-record screen.

11. Move the cursor to the third column and arrange this file from A to Z according to who was born in Oregon. Note the number of "immigrants."

12. Move the cursor to the fourth column and arrange this file from 0 to 9. Note the range of "newcomers" vs. "oldtimers."

Note Sara Blackbird's record. Although she has lived in Oregon 7-1/2 years she appears last in the file.

13. Move the cursor to this entry. Erase this number with Open-Apple Y and enter 7.5 .................................................................. press **RETURN**

14. Again arrange this file from 0 to 9 and note where Sara's record is. Those little details!

15. Now arrange the BIRTHDATE column in chronological order.

> **NOTE**: If you use the word "DATE" or "TIME" within a category name, *AppleWorks* will provide additional arrangement order criteria.
>
> Note what has happened to the records in which the teachers did not choose to include the year they were born. (No hiding in this database!)

## PART 9: ARRANGING DATABASE INFORMATION BY MORE THAN ONE CATEGORY (Open-Apple A)

Now we will examine the second option, sorting by several categories. With this 3.0 option, the cursor can be in any column to begin the Open-Apple A command. You will specify which fields to use from a second screen. In the following example we will sort the teachers into two groups—those who were born in Oregon and those who were not. Within each group we will alphabetize the teachers by last name.

1. Press Open-Apple A and select: Several categories....................... press **RETURN**

*AppleWorks* displays the Arrange screen with numbered category names.

2. Select: 3. OREGON BORN?................................................ press **RETURN**
   Records will be arranged *first* according to this field.

3. Select: 1. From A to Z...................................................... press **RETURN**

*AppleWorks* displays the name of the category at the top of the screen along with the arrangement order.

4. Select: 1. LAST NAME. ................................................ press **RETURN**

   Records will be further arranged according to information contained in this field.

5. Select: 1. From A to Z .................................................... press **RETURN**

6. Select: 1. Arrange file now.

7. Move through the file and note how records are now displayed.

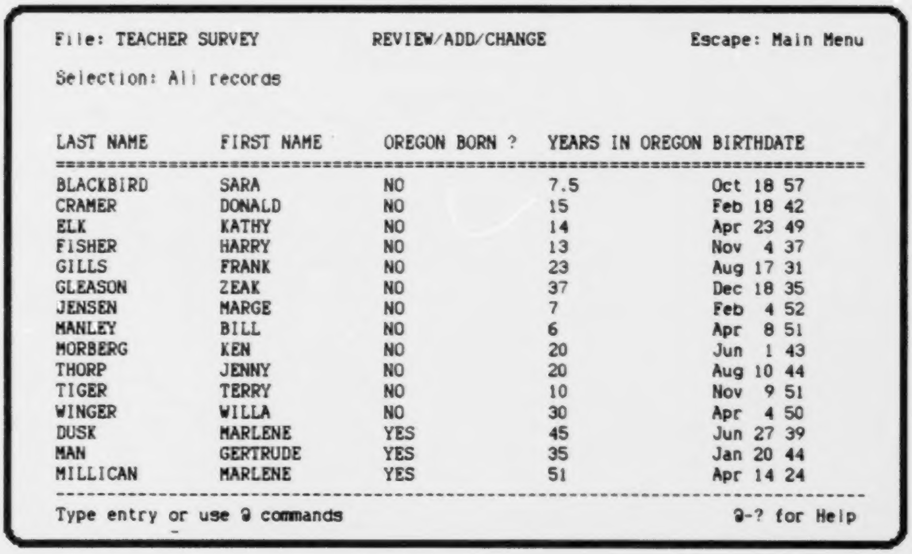
-All non-Oregon born teacher records are displayed alphabetically, followed by an alphabetized list of teachers born in Oregon.

We can have *AppleWorks* arrange records by criteria on as many as three categories. In this next part we will begin by grouping teachers according to what night they attend class, then according to whether they were born in Oregon. Finally we alphabetize the last names within each of the four subgroups.

8. Press Open-Apple A and select: Several categories...................... press **RETURN**
9. Select: 12. NIGHT, From A to Z
   Records will be arranged first according to this field.
10. Note the arrangement choice indicated at the top of the screen.
11. Select: 3. OREGON BORN, From A to Z.
    Records will next be further arranged according to information contained in this field.
12. Again note the arrangement choice indicated at the top of the screen.
13. Select: 2: Select third category to arrange by.
14. Now select: 1. LAST NAME, A to Z.

*AppleWorks* displays the arranged database.

15. Move through the file and note how records are now displayed:



```
File: TEACHER SURVEY           REVIEW/ADD/CHANGE             Escape: Main Menu

Selection: All records


LAST NAME       FIRST NAME      OREGON BORN ?   YEARS IN OREGON BIRTHDATE
==============================================================================
BLACKBIRD       SARA            NO              7.5             Oct 18 57
CRAMER          DONALD          NO              15              Feb 18 42
ELK             KATHY           NO              14              Apr 23 49
FISHER          HARRY           NO              13              Nov  4 37
GILLS           FRANK           NO              23              Aug 17 31
GLEASON         ZEAK            NO              37              Dec 18 35
JENSEN          MARGE           NO              7               Feb  4 52
MANLEY          BILL            NO              6               Apr  8 51
MORBERG         KEN             NO              20              Jun  1 43
THORP           JENNY           NO              20              Aug 10 44
TIGER           TERRY           NO              10              Nov  9 51
WINGER          WILLA           NO              30              Apr  4 50
DUSK            MARLENE         YES             45              Jun 27 39
MAN             GERTRUDE        YES             35              Jan 20 44
MILLICAN        MARLENE         YES             51              Apr 14 24
------------------------------------------------------------------------------
Type entry or use @ commands                                      @-? for Help
```

Monday night students are divided according to where they were born, from Blackbird through Winger, and Dusk through Moore. Alder through Tarra and Cook throughTabb are students from the Tuesday evening class.

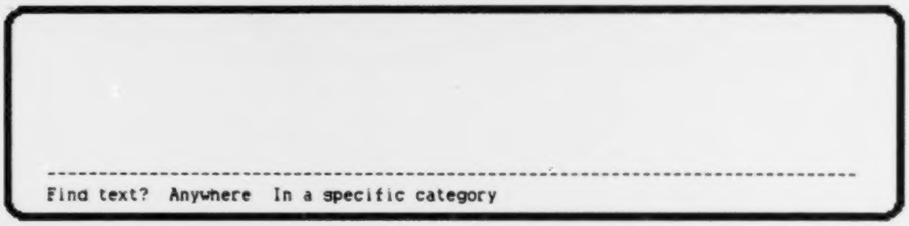
Arranging database records is a very powerful operation. We will examine this feature further when we begin to create printed reports, group records according to specific categories, and want to display subtotal values.

## PART 10: FINDING CERTAIN RECORDS (Open-Apple F)

The Find command (Open-Apple F) is helpful for locating records that contain a particular number, word, or piece of text. This command is very fast, but because it searches every category entry, it sometimes finds more than you expected. We'll use several examples to review this command.

1. The cursor can be anywhere on the multiple-record screen. Type Open-Apple F.

Again note the new 3.0 arrangement choices at the bottom of the screen:



```
--------------------------------------------------------------------------------
Find text?  Anywhere  In a specific category
```

2. To Find text, select: Anywhere............................................. press **RETURN**
3. At the bottom of the screen type the last name of one teacher—COORAN and press Return. Jean's record should now be on your screen.
4. To return to the multiple-record layout, press Escape.
5. Next we will look for all teachers who were born in November. Press Open-Apple F.
6. To Find Text, select: Anywhere.
7. For comparison information, type: NOV ................................. press **RETURN**
   All November entries should now be on the screen.

**NOTE:** Students are still grouped from the last sort according to which night they attended the workshop.

8. Now lets look for Janet Tabb. Press Open-Apple F.

9. To Find text, select: Anywhere.

10. To erase "NOV" press Open-Apple Y.

11. Now type: JANET........................................................ press **RETURN**

> **NOTE**: In this last example you did not press Escape to return all records to the screen before beginning the next Open-Apple F search. You can do one Find search after another. However, you do have to cancel (Open-Apple Y) the comparison information you requested in the previous search.

12. Thus far this command has done a great job of finding exactly what we have requested. Now let's try to find all the March birthdays. Press Open-Apple F.

13. To Find text, select: Anywhere.

14. Erase "JANET" and type: MAR........................................... press **RETURN**

15. What are Jensen, Dusk, and Millican doing on the screen? A closer look at their first names will show that they each contain a "MAR."

16. OK, but what's Harry Fisher doing in this group? Zoom in to the single-record display of his record.

17. It appears that this science teacher's favorite animal is a MARten.

18. Switch back to the multiple-record layout.

19. Note the message in the top left-hand corner of the screen: "Find all records that contain MAR." The records currently displayed on the screen were selected because they contained a "MAR" (anywhere).

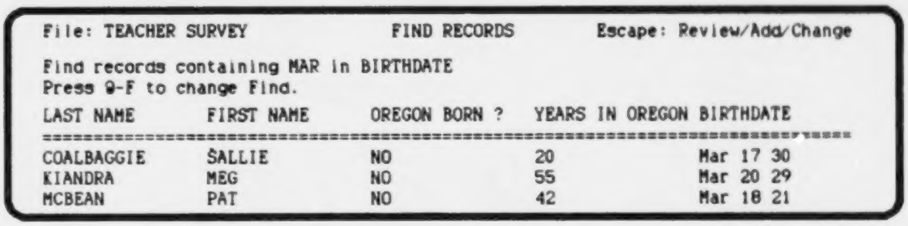
> **NOTE**: When selecting the "anywhere" option the *AppleWorks* 3.0 Find command searches information in *every* category, and if it finds a match, the record will be displayed. The second option "find text in a specific category" allows you to restrict a search to specific columns.

20. Press Open-Apple F and this time select: In a specific category.

21. Select: 5. BIRTHDATE.

22. Press Return to accept "MAR" from the previous find.

23. Note the message in the top left-hand corner of the screen:



```
File: TEACHER SURVEY            FIND RECORDS        Escape: Review/Add/Change

Find records containing MAR in BIRTHDATE
Press 9-F to change Find.
LAST NAME        FIRST NAME      OREGON BORN ?   YEARS IN OREGON BIRTHDATE
==============================================================================
COALBAGGIE       SALLIE          NO              20              Mar 17 30
KIANDRA          MEG             NO              55              Mar 20 29
MCBEAN           PAT             NO              42              Mar 18 21
```

The records currently displayed on the screen were selected because they contained a "MAR" in the BIRTHDATE field.

24. Press Escape. Now note the message in the top left-hand corner: "Selection: All records." *AppleWorks* often provides helpful screen information—if you know where to look.

## PART 11: CHANGING THE COLUMN WIDTH (Open-Apple L)

Earlier *AppleWorks* versions displayed only the first five database categories on the multiple-record screen. And unlike the spreadsheet, database columns did not scroll off the screen so more information could have been viewed. This was a major nuisance!

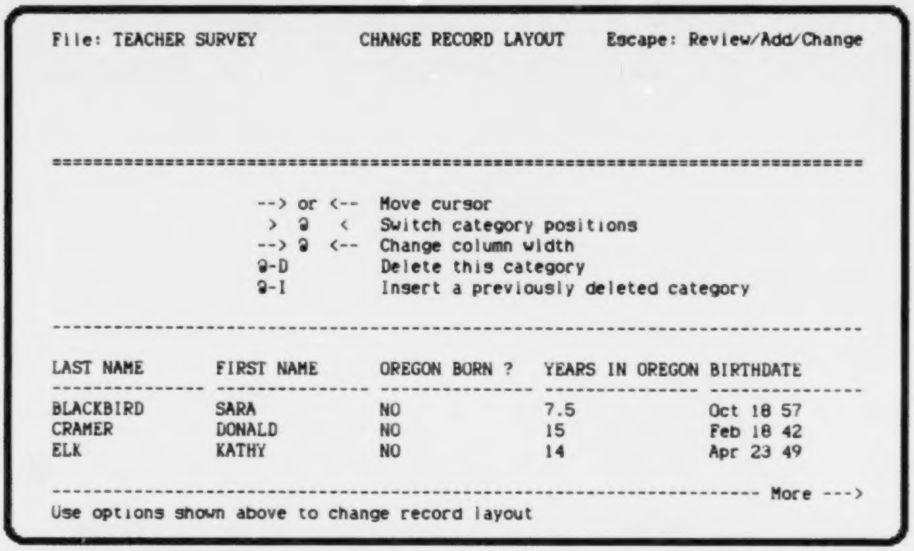
With version 3.0 columns now do scroll right and left, so "fiddling" with the multiple-screen layout (e.g., narrowing columns, switching them around for easier viewing) is not as crucial as it once was.

However, if you do wish to view more columns on the multiple-record screen —without having to scroll—you can decrease the width of each column. The default column width is 15 characters. To change that setting we use the database version of the Open-Apple L (Layout) command.

1. Begin on the multiple-record screen.

2. Press Open-Apple L (for Layout).

The Change Record Layout menu will be on the screen:

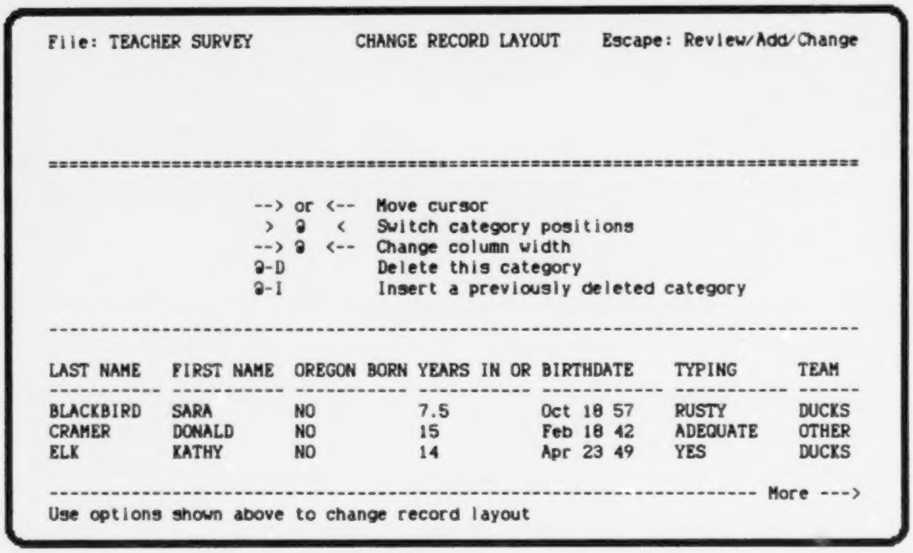


```
File: TEACHER SURVEY          CHANGE RECORD LAYOUT    Escape: Review/Add/Change




==========================================================================

                   --> or <--  Move cursor
                    > @  <     Switch category positions
                   --> @ <--   Change column width
                   @-D         Delete this category
                   @-I         Insert a previously deleted category

--------------------------------------------------------------------------

LAST NAME      FIRST NAME     OREGON BORN ?  YEARS IN OREGON BIRTHDATE
-------------- -------------- -------------- -------------- --------------
BLACKBIRD      SARA           NO             7.5            Oct 18 57
CRAMER         DONALD         NO             15             Feb 18 42
ELK            KATHY          NO             14             Apr 23 49

---------------------------------------------------------------- More --->
Use options shown above to change record layout
```

**NOTE**: The top of the screen contains information for moving the cursor, switching, deleting, or inserting categories, and changing the column width.

The bottom portion of the screen displays three records. These records can not be changed now, but they serve as examples of how the database will appear when viewed on the Review/Add/Change screen.

3. With the cursor on the line under the LAST NAME category, hold down the Open-Apple key and tap the Left Arrow key four times.
4. Note the column width has decreased and the FIRST NAME heading has moved closer.
5. Use either the Tab or Right Arrow key to move the cursor on the line under the FIRST NAME category title.
6. Again use the Open-Apple and Left Arrow keys to decrease this column by four characters.
7. Repeating this process, decrease the column widths of the next five columns by four characters each.



```
File: TEACHER SURVEY          CHANGE RECORD LAYOUT    Escape: Review/Add/Change




================================================================================

                     --> or <--  Move cursor
                      >  @   <   Switch category positions
                     --> @  <--  Change column width
                     @-D         Delete this category
                     @-I         Insert a previously deleted category

--------------------------------------------------------------------------------

LAST NAME   FIRST NAME  OREGON BORN YEARS IN OR BIRTHDATE    TYPING      TEAM
----------- ----------- ----------- ----------- ------------ ----------- ------
BLACKBIRD   SARA        NO          7.5         Oct 18 57    RUSTY       DUCKS
CRAMER      DONALD      NO          15          Feb 18 42    ADEQUATE    OTHER
ELK         KATHY       NO          14          Apr 23 49    YES         DUCKS

--------------------------------------------------------------------- More --->
Use options shown above to change record layout
```

As columns become narrower, more categories will appear on the screen—representing the new layout for the entire database.

> **NOTE**: Changing the multiple-record layout does not affect how information is displayed on the single-record screen.

8. When you have completed the layout changes, press Escape twice to return to the Review/Add/Change screen.

Seven columns should now be displayed on the screen.

> By decreasing the column width, all information in some categories may no longer be displayed. Note Pat McBean's favorite team. Adjusting column widths sometimes requires some "fiddling" in order to get necessary information in each column displayed in the multiple-record layout.

## PART 12: HIDING A CATEGORY (Open-Apple L)

A second way to alter the screen layout would be to *temporarily* hide whole categories from view in the multiple-record layout. They would no longer appear on the screen—but could be brought back at any time.

1. Begin on the multiple-record screen.
2. Press Open-Apple L (for Layout).
3. Place the cursor on the line below the category title FIRST NAME.
4. Press Open-Apple D (to Delete or hide).

> The Open-Apple D command within the Change Record Layout option will ***not remove*** information from the database; the information stays in the record and continues to appear when you display the record in single-record layout. The Open-Apple D command simply hides all the information in that category from screen view.
>
> However, using the Open-Apple D command on the multiple-record Review/Add/Change screen ***will permanently delete*** the record from memory.
>
> Open-Apple I returns hidden categories to the screen.
>
> When a file is saved, categories that have been hidden from the multiple-record screen will not appear the next time the file is added to the Desktop. However, they can still be returned to the screen through Open-Apple I from the Change Record Layout screen.

5. Place the cursor below the category title OREGON BORN?
6. Press Open-Apple D.
7. Use the Open-Apple D command to hide BIRTHDATE and TYPING.
8. To see the categories that have been hidden, press Open-Apple I (to Insert).

By pressing Return, the highlighted category would again appear on the screen.

9. Press Escape. We will not insert any of these categories.
10. Press Escape to return to the Review/Add/Change screen.
11. Press Escape to indicate that when back on the Review/Add/Change screen you want the cursor to move down whenever you press the Return key.

## PART 13: SELECTING RECORDS: AN OVERVIEW (Open-Apple R)

So far we have been working with all 34 records in this file. There is a database feature which allows you to select *certain* records to view on screen or in a printed report.

Open-Apple R is used to set up record selection rules. We will write several record selection rules, but first read the following overview on how these rules are to be written.

- Use Open-Apple R (Record Selection) to begin.
- Use the cursor to highlight the category that will determine which records are to be selected. Every category will be available on the screen—even those that are hidden.
- Use the cursor to highlight a comparison descriptor (such as "equals," "is less than," "begins with," etc.)
- Type comparison information (such as "DUCKS," "100," "Smith," etc.)
- Press Escape if the record selection rule is completed.
- Or choose a CONNECTOR (such as "and" or "or") and continue to describe the record selection rule.
- To return all records to the screen, again press Open-Apple R.
- This feature is available for viewing selected records on the screen and for printing reports.
- There is a limit of three comparison descriptors.

## PART 14: SELECTING RECORDS: A "GUIDED TOUR" (Open-Apple R)

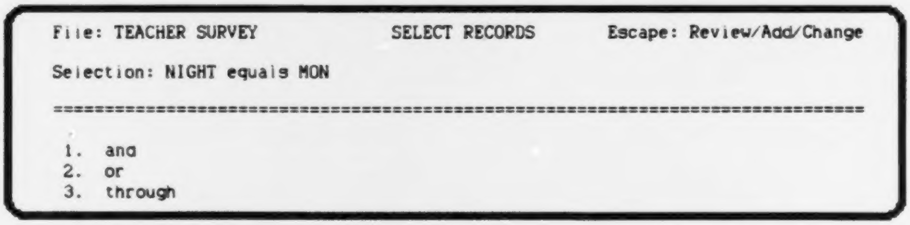
In the following exercise, we will use the TEACHER SURVEY database to answer 10 questions. The questions are listed first, followed by the steps needed to find the correct answers.

> **NOTE**: Each time you want to search for another set of records, begin with Open-Apple R.

Select records for the following questions:

1. How many people attended the MONDAY night class?
   a. Press Open-Apple R.
   b. Highlight: NIGHT .................................................. press **RETURN**
   c. Highlight: Equals.................................................. press **RETURN**
   d. Type: MON .......................................................... press **RETURN**

Note the Selection Rule at the top of the screen:



```
File: TEACHER SURVEY            SELECT RECORDS       Escape: Review/Add/Change

Selection: NIGHT equals MON

==============================================================================

 1.  and
 2.  or
 3.  through
```

   e. Press Escape. "And" or "Or" connectors are not needed.
   f. On the multiple-record screen, use the Tab key to scroll the NIGHT category on to the screen.
   g. Use the Arrow keys to examine records that were selected, noting which night these people attended class.

2. How many people had last names beginning with the letter M?

   a. Press Open-Apple R.
   b. For select all records ? Select: No...................................... press **RETURN**

Note what is displayed in the selection rule area at the top of the screen.

   c. Highlight: LAST NAME ................................................ press **RETURN**
   d. Highlight: Begins With.................................................. press **RETURN**
   e. Type: M. ................................................................. press **RETURN**
   f. Press Escape.
   g. Use the Open-Apple Tab keys to scroll back to the LAST NAME category to view the eight names.

3. How many people were born in Oregon?
   a. Press Open-Apple R. Select: No..................................... press **RETURN**

**NOTE**: you can "highlight" categories by moving the cursor with arrow keys or by typing the category number.

b. Highlight: OREGON BORN ?........................................ press **RETURN**
c. Highlight: Equals.......................................................... press **RETURN**
d. Type: YES.................................................................... press **RETURN**

e. Press Escape. How many ? ________

f. This time you will need to switch to the single-record layout and use the Open-Apple and Down arrow keys to verify that each selected single record indicated a "Yes" for this question.
g. If you attempt to advance beyond the last record, *AppleWorks* informs you, "You are now past the last record of your file and can now start typing new records at the end." Indicate that you do not want to insert new records by pressing Return.

4. How many people in this survey have lived in Oregon less than 10 years?

a. Press Open-Apple R.
b. Highlight: YEARS IN OREGON ......................... **(you know what to do)**
c. Highlight: Is Less Than
d. Type: 10
e. Press Escape. How many ? ________

5. Of those folks born in Oregon, how many are Duck fans?

a. Press Open-Apple R.
b. Highlight: OREGON BORN ?
c. Highlight: Equals
d. Type: YES
e. Highlight: And
f. Highlight: TEAM
g. Highlight: Equals
h. Type: DUCKS
i. A second connector is not needed, so press Escape. How many ? ________

6. How many last names are in the range A through F?

a. Highlight: LAST NAME
b. Highlight: Begins With
c. Type: A
d. Highlight: Through
e. Type: F
f. Press Escape.
g. Use Open-Apple A to arrange this list by last name. How many ? ________

7. How many people were not Duck or Beaver fans?

a. Highlight: TEAM; Does Not Contain
b. Type: DUCKS
c. Highlight: And
d. Highlight: TEAM; Does Not Contain
e. Type: BEAVERS
f. Escape. How many ? ________

8. How many people liked dogs ?

   a. Highlight: ANIMAL; Equals
   b. Type: Dog
   c. Escape.

How many ? ________

Note what is displayed in the ANIMAL column.

9. Let's try that again . . .

   a. Highlight: ANIMAL; Contains
   b. Highlight: Contains
   c. Type: DOG

Note what is now displayed in the ANIMAL column.

> Categories containing anything other than *DOG* were not selected in the first search. The descriptor "Equals" does a literal letter-for-letter comparison. Either upper- or lower-case will be accepted.
>
> When the descriptor "Contains" was used, records that have dog or dogs were highlighted. If "doggie" had been entered in that category, it would have appeared also.

10. What are some of the food favorites?

   a. Highlight: FOOD; Contains
   b. Type: PIZZA
   c. Highlight: Or
   d. Highlight: FOOD; Contains
   e. Type: CHOC
   f. Highlight: Or
   g. Highlight: FOOD; Begins With
   h. Type: P

## PART 15: WRITING YOUR OWN SELECTION RULES (OPTIONAL)

This section has been included as an optional activity. A database file containing the 1984 Olympic winners is available for you to practice designing your own selection rules. You could take time now, or return to this section after examining database printing features.

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop
3. Select: 1. Get Files from: The Current Disk
4. Select: --> OLYMPIC MEDALISTS

You should now have a copy of the 1984 Olympic winners: their names, countries, and standings for each event.

5. Use Open-Apple Z and switch to the single-record layout.
6. Use Open-Apple 9 to quickly move to the end of this file.

   How many RECORDS are in this file ? ______________
7. Use Open-Apple 1 to move to the beginning of this file.
8. Now design your own record selection rules.
   - Try different **comparison** options (Equals, Contains ...)
   - Work with the different **connectors** (And, Or, Through)

   Which connector limits your possible record choices ? _____

   Which connector will increase the possibilities ? _____
9. Design a few questions that could be answered using the information in this database file.
10. Following the pattern set-up in PART 11, write the record selection rules that would answer your questions.
11. Test your selection rules with the database.
    Find anything interesting?

# ACTIVITY 2
# PRINTING LABEL REPORTS

Once a database has been created, information can be printed as single records (using the Labels option), or in the multiple-record, columnar format (with the Table report option). Printing database records can be a more involved process than printing either word processor or spreadsheet files.

For this activity we will set up a very simple database and examine the basic steps for printing single records. Information from one record will be displayed on several lines. We will set the paper size for one inch by three and a half inches, and organize the layout so that information will fit on mailing labels. Here we will assume pinfeed sheets of mailing labels come one label across a page. In Part 8 we will reset two printer options to allow *AppleWorks* to print three labels across a page.

## PART 1: CREATING A DATABASE FROM SCRATCH

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop .......................................... press **RETURN**
3. Select: 4. Make a New File for the Database ............................ press **RETURN**
4. Select: 1. From Scratch .................................................... press **RETURN**
5. Type the name of your new file: LABELS............................... press **RETURN**
6. Type the following categories:

   **LAST NAME** (First: use Open-Apple Y)
   **FIRST NAME**
   **STREET**
   **CITY**
   **STATE**
   **ZIP**
   **SCHOOL**

7. Press Escape when all the categories have been entered.
8. Press the Space Bar to begin entering information.
9. Enter your name and address.
10. Press Return after typing your school.
11. Have your partner complete the second record.
    We will only have two records in this file.

12. Press Open-Apple Z to view the two records in the multiple-record layout.

## PART 2: COPYING ONE RECORD WITHIN A DATABASE FILE (Open-Apple C)

First we will use the *AppleWorks* Copy feature to duplicate the two address records. Then we will see how we can change the layout for the single-record layout.

1. Place the cursor on the first letter of your last name.
2. Press Open-Apple C (to Copy).
3. Select: Current Record.
4. For how many copies of current record, type: 10 ........................ press **RETURN**

You should now have a database containing 12 records.

5. Move the cursor to the row containing your partner's record, and repeat steps 2 through 4.

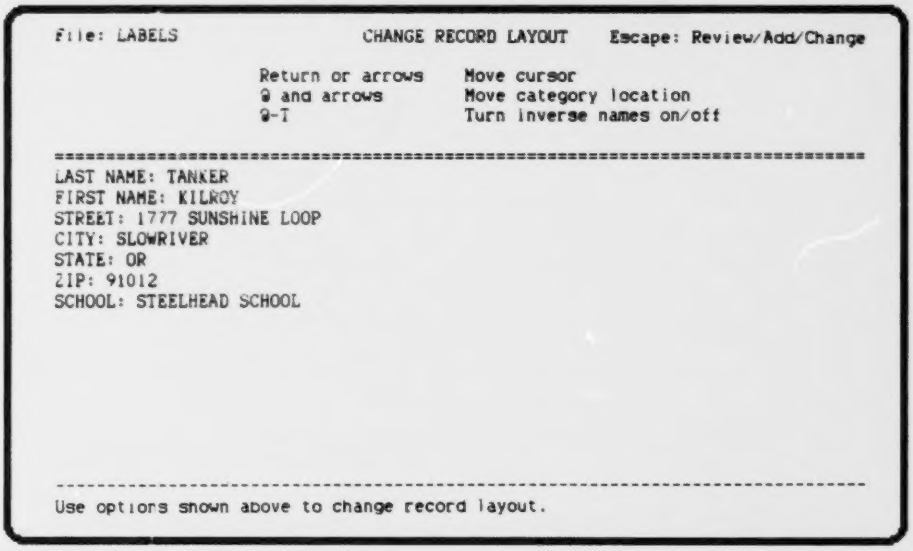
> **NOTE**: To duplicate one record many times, you can start the copy process from either the multiple- or single-record screen.

## PART 3: MOVING CATEGORIES ON THE SINGLE-RECORD SCREEN (Open-Apple L)

In Activity 1 we learned how to change the layout for records displayed on the multiple-record screen. *AppleWorks* also allows you to adjust how records appear on the single-record screen.

1. Make sure you are in the single-record layout.
2. Press Open-Apple L (for Layout).

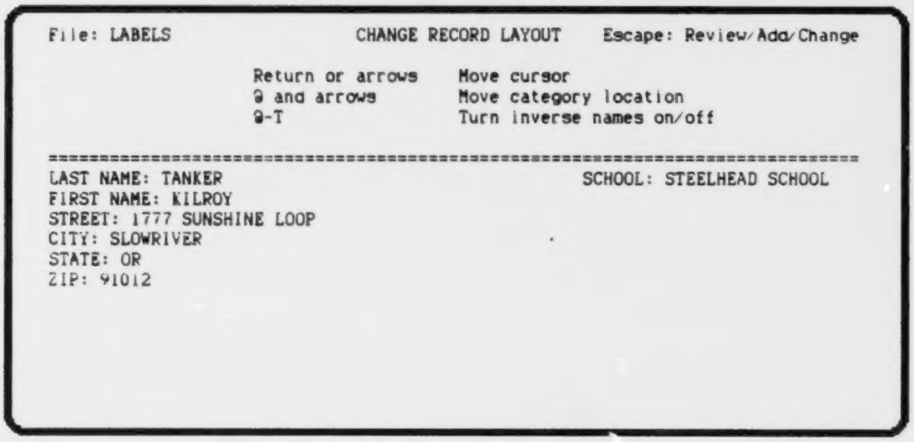
3. A different Change Record Layout menu will be displayed:



```
File: LABELS                  CHANGE RECORD LAYOUT     Escape: Review/Add/Change

                    Return or arrows    Move cursor
                    @ and arrows        Move category location
                    @-T                 Turn inverse names on/off

================================================================================
LAST NAME: TANKER
FIRST NAME: KILROY
STREET: 1777 SUNSHINE LOOP
CITY: SLOWRIVER
STATE: OR
ZIP: 91012
SCHOOL: STEELHEAD SCHOOL








--------------------------------------------------------------------------------
Use options shown above to change record layout.
```

On this screen we can move the cursor, move the category location, and display the category names, if desired.

4. Put the cursor on the first letter of the category name, SCHOOL.
5. With the cursor on the S of SCHOOL, hold down the Open-Apple key and tap the Right Arrow key to move this category to the right side of the screen.
6. Use the Open-Apple and Up Arrow keys to move it to the top of the screen:



```
File: LABELS                  CHANGE RECORD LAYOUT     Escape: Review/Add/Change

                    Return or arrows    Move cursor
                    @ and arrows        Move category location
                    @-T                 Turn inverse names on/off

================================================================================
LAST NAME: TANKER                                    SCHOOL: STEELHEAD SCHOOL
FIRST NAME: KILROY
STREET: 1777 SUNSHINE LOOP
CITY: SLOWRIVER
STATE: OR
ZIP: 91012
```

*AppleWorks* has a screen display feature allowing category names to stand out from the record entries.

7. Press Open-Apple T (to toggle) to switch category names to the inverse display.
8. Press Open-Apple T to switch these names back to normal display.

> **NOTE**: Unlike the Multiple-Record layout screen you can't hide a category when changing the Single-Record layout screen. There is no Open-Apple D (to Delete) or I (to Insert) options displayed on this screen. If you want to remove a category from the Single-Record layout screen you would have to *permanently* delete it from the database.

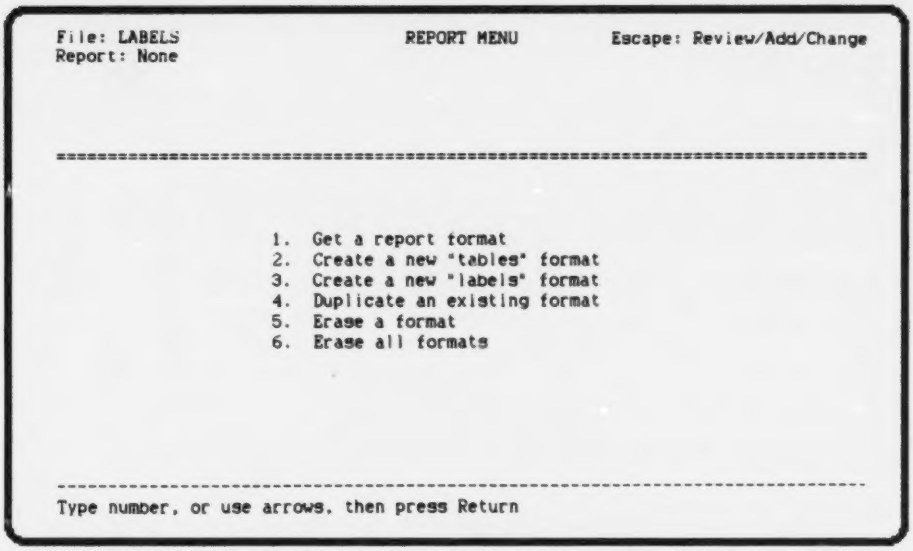
9. When done, press Escape to return to the Review/Add/Change screen.
10. To have the cursor continue to move in the standard direction whenever we press Return, select: 1. Order in which you defined categories.
11. Now note the location of the SCHOOL category on the single-record screen.
12. Note that moving a category location on the single-record screen does not affect the multiple-record screen layout.

## PART 4: CREATING A NEW LABEL FORMAT (Open-Apple P)

To begin a label report, we assign a report name and "format" for it. A format defines how we want records to appear on the printout, e.g., which ones should be included, how they should be arranged. And when setting up a label format, we indicate exactly where information should appear on a page, using the process introduced in Part 3. In this part we will create and customize a labels report for mailing labels.

1. Press Open-Apple P (to Print).

*AppleWorks* next displays the Report Menu:



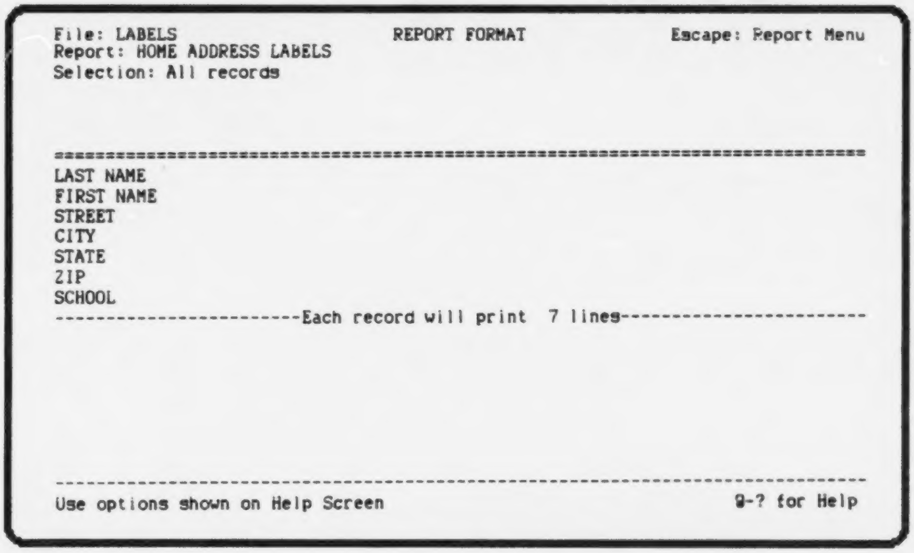
```
File: LABELS                      REPORT MENU          Escape: Review/Add/Change
Report: None

================================================================================


                    1.  Get a report format
                    2.  Create a new "tables" format
                    3.  Create a new "labels" format
                    4.  Duplicate an existing format
                    5.  Erase a format
                    6.  Erase all formats



--------------------------------------------------------------------------------
Type number, or use arrows, then press Return
```

2. Select: 3. Create a new "labels" format .................................... press **RETURN**

3. Select: 1. Create a new "labels" format from scratch.

4. For report name, type: HOME ADDRESS LABELS.................... press **RETURN**

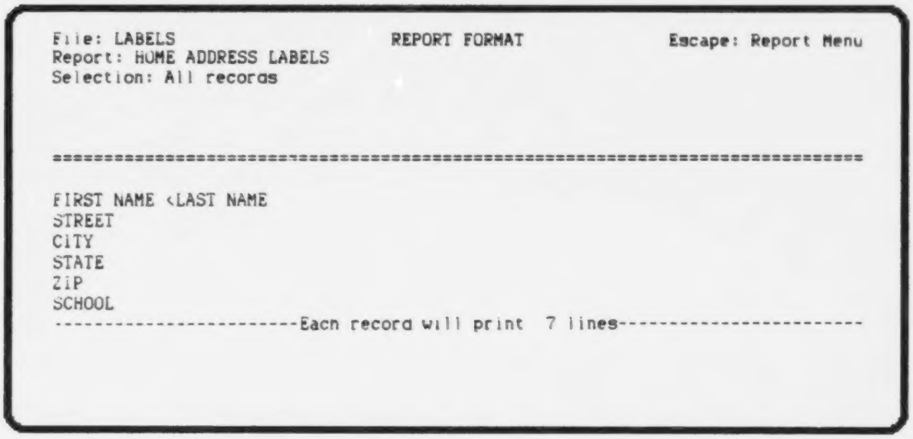
Having selected "from scratch" the seven categories will be listed vertically on the screen:



```
File: LABELS                      REPORT FORMAT              Escape: Report Menu
Report: HOME ADDRESS LABELS
Selection: All records


================================================================================
LAST NAME
FIRST NAME
STREET
CITY
STATE
ZIP
SCHOOL
------------------------Each record will print  7 lines------------------------





--------------------------------------------------------------------------------
Use options shown on Help Screen                                      9-? for Help
```

We will place first and last name categories on the same line and use an *AppleWorks* command to control the spacing between these two categories.

5. With the cursor on the L of LAST NAME, hold down the Open-Apple key and tap the Right Arrow key to move this category to the right about 12 spaces.
6. Use the Open-Apple and Arrow keys to move the LAST NAME category down and next to FIRST NAME. (e.g., FIRST NAME LAST NAME)
7. With the cursor on the L of LAST, press Open-Apple J (to Justify). The less than symbol ( < ) will appear:



```
File: LABELS                      REPORT FORMAT             Escape: Report Menu
Report: HOME ADDRESS LABELS
Selection: All records



==============================================================================

FIRST NAME <LAST NAME
STREET
CITY
STATE
ZIP
SCHOOL
------------------------Each record will print  7 lines------------------------
```

**NOTE**: When printed, FIRST and LAST names will line up side by side (justified). *AppleWorks* closes up any extra spaces and automatically includes a space between categories that have been justified—no matter how long the entries are.

8. Next place the cursor on the S of STATE.
9. Position this category next to CITY.
10. With the cursor on the S, press Open-Apple J.
11. Position the ZIP category next to CITY<STATE and again press Open-Apple J.

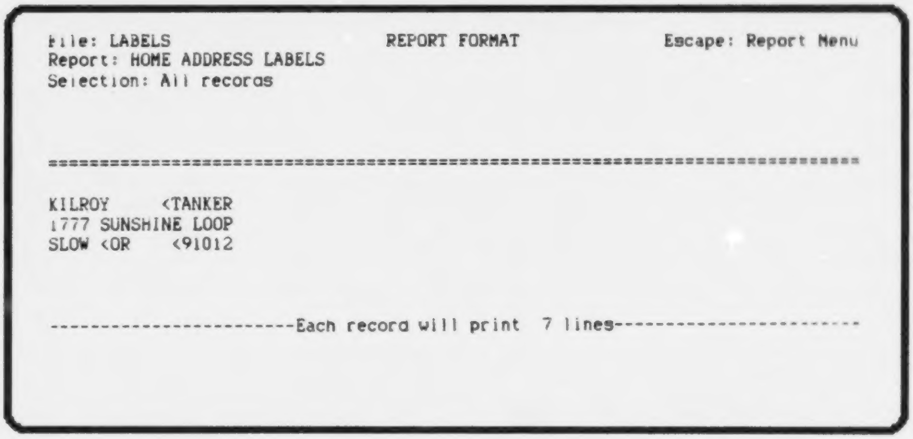
We do not want the name of the school on this mailing label.

12. Move the cursor to the S of SCHOOL and press Open-Apple D.

**NOTE**: As with the Delete command from the Multiple-Record Layout screen, this category has now been hidden. Information in this category will not appear on the mailing labels, but it is still available to use in other reports. If needed for this report, Open-Apple I would bring this category back onto the screen.

If more than one category is on the same line, the Delete command hides only the category under the cursor.

13. When SCHOOL was deleted, a spacing line was left. *If* we wanted to get rid of this blank line, we would press Open-Apple D again.
14. Press Open-Apple Z to see what one of your labels will look line when printed.



```
File: LABELS                     REPORT FORMAT              Escape: Report Menu
Report: HOME ADDRESS LABELS
Selection: All records



===============================================================================

KILROY     <TANKER
1777 SUNSHINE LOOP
SLOW <OR   <91012



------------------------Each record will print  7 lines------------------------
```

Don't worry—having set the justified command all of "Slowriver" will appear when printed. The screen version is only displaying the number of characters in the category name.

15. When done, Zoom back to view category names only.

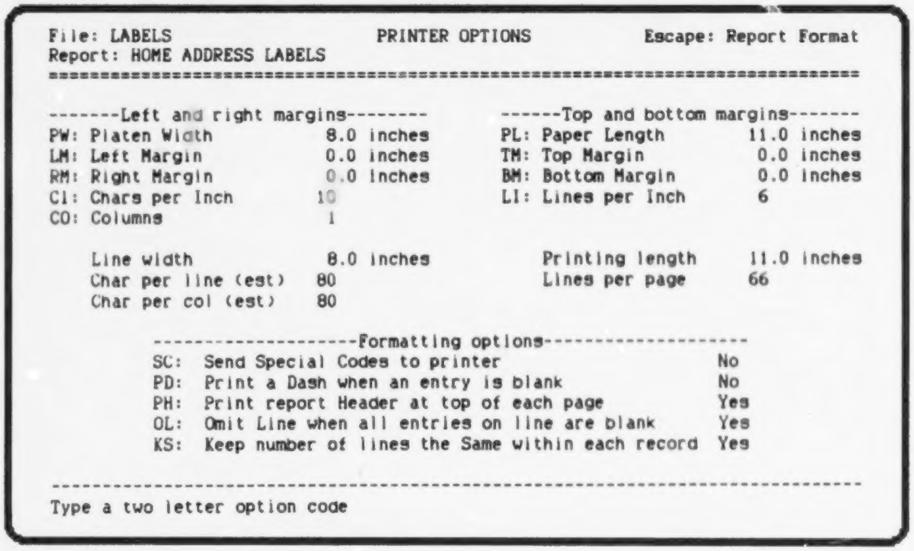
## PART 5: SETTING PRINTER OPTIONS FOR ONE-ACROSS LABELS (Open-Apple O)

Like the word processor and spreadsheet, the database program has default printer settings. If we intend to do something *special* —such as print 1-inch by 3-1/2-inch labels—we will need to change some of these settings.

> **NOTE**: The screen indicates how many lines will be printed on each label. *This is important information* that will assist you in fitting text uniformly on each label.

1. Press Open-Apple O (for Printer Options).

This Option menu is very similar to the spreadsheet menu:



```
File: LABELS                    PRINTER OPTIONS          Escape: Report Format
Report: HOME ADDRESS LABELS
==============================================================================

-------Left and right margins--------      ------Top and bottom margins-------
PW: Platen Width            8.0 inches     PL: Paper Length        11.0 inches
LM: Left Margin             0.0 inches     TM: Top Margin           0.0 inches
RM: Right Margin            0.0 inches     BM: Bottom Margin        0.0 inches
CI: Chars per Inch         10              LI: Lines per Inch       6
CO: Columns                 1

    Line width              8.0 inches         Printing length     11.0 inches
    Char per line (est)    80                  Lines per page      66
    Char per col (est)     80

          -------------------Formatting options-------------------
          SC:  Send Special Codes to printer                     No
          PD:  Print a Dash when an entry is blank               No
          PH:  Print report Header at top of each page           Yes
          OL:  Omit Line when all entries on line are blank      Yes
          KS:  Keep number of lines the Same within each record  Yes

------------------------------------------------------------------------------
Type a two letter option code
```

2. Note the "Lines Per Page" setting: an 11-inch page contains 66 lines. The default PL setting is 11.0 inches.
3. Type: PL (for Paper Length)................................................ press **RETURN**
4. For inches, type: 1........................................................ press **RETURN**
5. Now note the new "Lines per page" setting: a one-inch label can contain only six lines.
6. Type: PW (for Platen or Page Width).
7. For inches, type: 3.5.
8. Type: LM (for Left Margin).
9. For inches, type: .5.
10. Type: PH (for Print report Header).

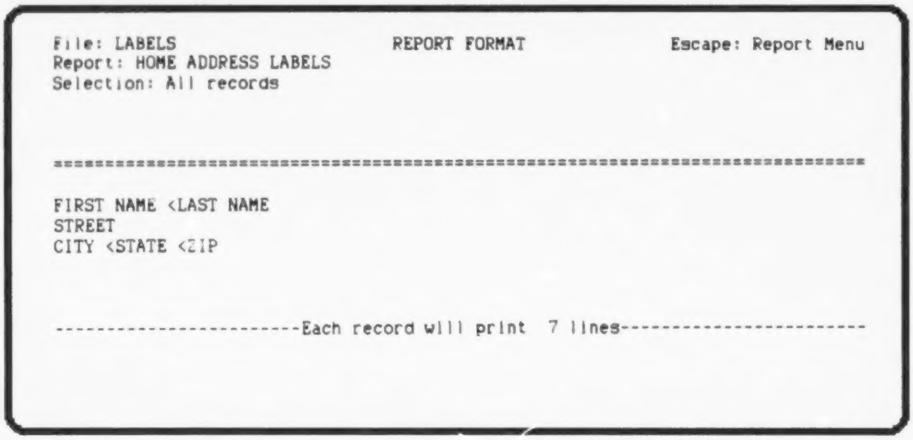
The command to turn the page header on or off will switch to No.

**NOTE**: The database "header" contains the file name, report name, record selection rules, the page number, and if you want, the date. *We do not want any of this information to upset the regular flow when printing mailing labels.* The PH setting must be set to "No."

**NOTE**: An entry containing a blank line can throw off the regular printing of labels. This can be avoided as long as both the OL and KS settings remain on *Yes*. If all entries on a line are blank, the OL setting will omit the line. KS will add a blank line at the end of each label, so printing does not slip off the label.

11. The printer options for a label printout have now been set. Press Escape.

12. Pay special attention to the line indicator on the label screen:



```
File: LABELS                        REPORT FORMAT              Escape: Report Menu
Report: HOME ADDRESS LABELS
Selection: All records



===============================================================================

FIRST NAME <LAST NAME
STREET
CITY <STATE <ZIP



-----------------------Each record will print  7 lines-----------------------
```

**NOTE**: The number of lines you plan to print (e.g., "Each record will print 7 lines") *must* agree with the number of lines that can actually fit on a one-inch label.

With the current settings, each label will print seven lines before scrolling to the next label. However, one-inch labels can only contain six lines — any number of lines more or less will cause printing problems (e.g., information will be split between labels).

The *record length* displayed on the Report Format screen must equal the *lines per page* displayed on the Printer Options screen.

13. Place the cursor on one of the blank lines below CITY<STATE<ZIP.
14. Press Open-Apple D to delete one line. The line indicator should now show "Each record will print 6 lines." Both settings now agree.

## PART 6: PRINTING TO THE SCREEN (Open-Apple P)

Once printer options have been set, the database can be printed. *AppleWorks* provides a very nice feature by allowing you to *print to the screen*. Each record can be examined before sending anything to the printer.

1. Press Open-Apple P (to Print).
2. Select: The screen............................................................ press **RETURN**
3. Follow the screen instructions to see what each label will look like.
4. After viewing the labels, any necessary changes can be made before printing.

> **NOTE**: Both arranging (Open-Apple A) and record selecting (Open-Apple R) features can be used to determine which records will be printed, and in what order.

5. When back on the Report Format screen, place the cursor on the < symbol in front of the LAST NAME category.
6. Arrange the LAST NAME category from A to Z.
7. Print to the screen.
8. Press Open-Apple S to save this file.

> The database has now been saved, along with *all* the printer specifications you have set up. The same database file can contain up to 20 different report formats.
>
> To find this set-up in the future:
>
> - First add the LABELS database to the Desktop.
> - Press Open-Apple P.
> - Now you will not have to *create* a labels format but rather *get the report format* — the one called HOME ADDRESS LABELS.

## PART 7: TURNING OFF THE TOP-OF-PAGE COMMAND

When printing mailing labels you must also make sure that *AppleWorks* is not set up to *assume* an 11-inch page. If you plan to run mailing labels, you will need to change a printer specification from the "Other Activities" option on the Main Menu.

1. Escape to the Main Menu.
2. Select: 5. Other Activities.
3. Select: 6. Select standard settings for *AppleWorks*.
4. Select: 6. Specify information about your printer(s).
5. Select: 4. Change printer specifications (name of your printer).
   Note: If you have more than one printer, choose the one you will be using for the mailing labels.
6. Select: 2 . Accept top-of-page commands.
7. If the option is set to Yes, change it to No.

Now your printer will not advance your paper 10 inches after printing just one 1-inch label.

8. Press Escape to return to the Main Menu.

## PART 8: PRINTING MULTIPLE COLUMNS OF LABELS (Open-Apple P, Open-Apple O)

With *AppleWorks* 3.0 we can also set up a labels report and print multiple columns of mailing labels. To examine the necessary printer option adjustments we will continue to use the LABELS database and set up a second labels report for printing school name tags.

1. From the Main Menu select 2: Work with one of the files on the Desktop.
2. Select: LABELS.
3. From the Review/Add/Change screen press Open-Apple P.
4. Select: 4. Duplicate an existing format.
5. Select: 1. HOME ADDRESS LABELS.
6. To type a name for this report, press Open-Apple Y and enter: NAME TAG FORMAT

A copy of the HOME ADDRESS LABELS format—including printer options—has now been set up for the LABELS database. The majority of the work has been done, all we need to do is determine which categories to include on the labels, and control the printing to allow for "three-across" labels.

7. Use the Delete command (Open-Apple D) to hide the STREET, CITY, STATE, and ZIP categories.

8. On a line under FIRST NAME <LAST NAME, insert the SCHOOL category (Open-Apple I).

9. Press Open-Apple O to display the Printer Options menu.

"Three across" labels typically come on eight-inch wide sheets. The Platen Width setting we used for the home address labels needs to be changed.

10. Type: PW (for Platen or Page Width)........................................ press **RETURN**

11. For inches, type: 8.0........................................................ press **RETURN**
Note the estimated number of characters for a one column printing.

12. For left margin, type: 0.

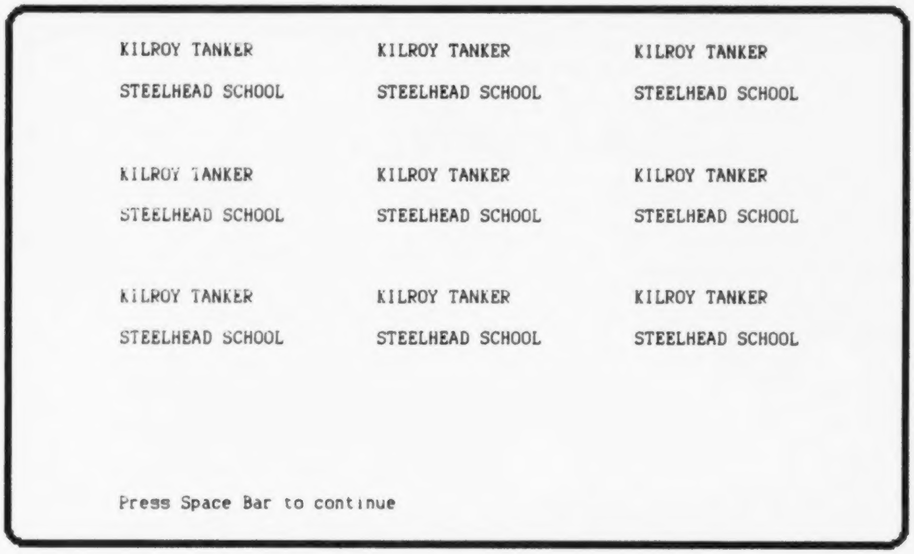
13. To set the number of labels we want to print across, type: CO

14. For number of columns, enter: 3.

15. Now note the new "Char per col" setting: when printing three-across, each label can contain about 26 characters.

16. Press Escape to return to the Report Format screen.

17. Print to the screen to view how labels will appear.



```
KILROY TANKER             KILROY TANKER             KILROY TANKER

STEELHEAD SCHOOL          STEELHEAD SCHOOL          STEELHEAD SCHOOL


KILROY TANKER             KILROY TANKER             KILROY TANKER

STEELHEAD SCHOOL          STEELHEAD SCHOOL          STEELHEAD SCHOOL


KILROY TANKER             KILROY TANKER             KILROY TANKER

STEELHEAD SCHOOL          STEELHEAD SCHOOL          STEELHEAD SCHOOL





Press Space Bar to continue
```

**NOTE**: To print multiple columns of labels:

- set CO (columns) to the number of labels across you want to print;
- set PW (platen width) to the width of the sheet containing the labels;
- set the PL (paper length) to the measure of your labels.

We have now learned how to create and customize a labels-style report. In Activities 4, 5, and 6 you will learn the formatting options for a table report.

18. Save this file.
19. Return to PART 7 on page 32 and repeat steps 1 through 8 to again reset *AppleWorks* to accept all top-of-page commands.

# ACTIVITY 3
# WORKING WITH A DATABASE

In this activity we will learn several new *AppleWorks* commands and database techniques, including:

- How to insert the same entry in the same category for every *new* category;
- How to copy records between database files;
- How to freeze database titles; and
- How to add a category and insert new records.

We will also have a chance to review the following database features that were introduced in Activity 1 in this chapter:

- Creating a new database file;
- Sorting and selecting database records; and
- Reviewing how *AppleWorks* converts information to a standard time or date format.

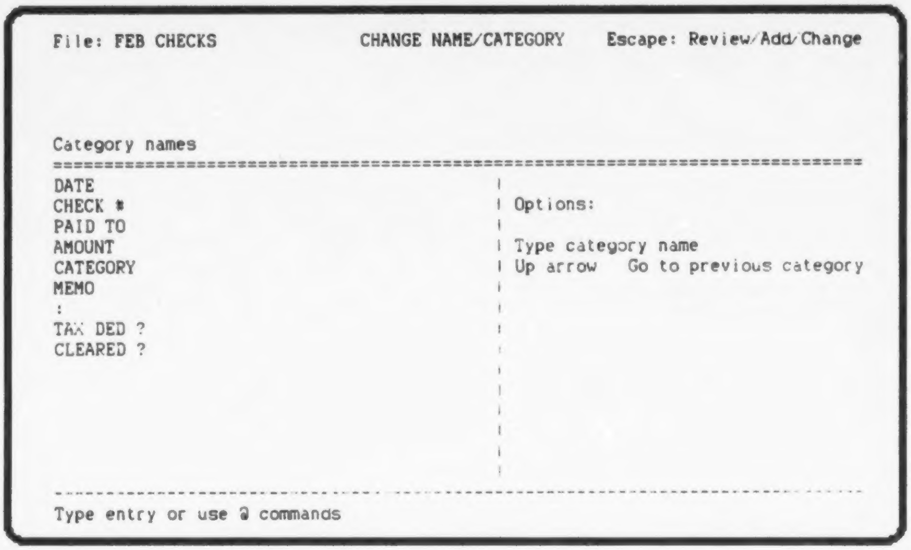
## PART 1: CREATING A DATABASE FROM SCRATCH

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop ........................................ press **RETURN**
3. Select: 4. Make new file for the Data Base................................ press **RETURN**
4. Select: 1. From scratch ...................................................... press **RETURN**
5. For filename, type: FEB CHECKS....................................... press **RETURN**

## PART 2: ENTERING CATEGORY NAMES

First we will enter category names for information relating to personal checks. When we begin to enter specific information, each *record* will contain information for one check. The *file* will contain checks written in one month.

1. All category entries will be upper case, so set the Caps Lock key.
2. Use Open-Apple Y to erase Category 1.
3. Now enter the following categories. After each entry press Return to continue.



```
File: FEB CHECKS            CHANGE NAME/CATEGORY    Escape: Review/Add/Change



Category names
============================================================================
DATE                                     |
CHECK #                                  | Options:
PAID TO                                  |
AMOUNT                                   | Type category name
CATEGORY                                 | Up arrow   Go to previous category
MEMO                                     |
:                                        |
TAX DED ?                                |
CLEARED ?                                |
                                         |
                                         |
                                         |
                                         |
                                         |
----------------------------------------------------------------------------
Type entry or use @ commands
```

The category entered as a colon provides an *extra* line for long memo entries. Entries over 76 characters could be continued on the next line and on the single-record screen will read as a block of text.

4. After entering the last category, press Return and then Escape.

5. Note the screen message and press the Space Bar to begin entering record information.

## PART 3: SETTING STANDARD VALUES (Open-Apple V)

*AppleWorks* has a convenient command that allows you to type certain information just one time (e.g., zip codes) and then have it appear in each *new* database *record*. Before entering information for each check, we will use Open-Apple V (for Standard Value) to set the *date* entry for February and to set the *tax deductible* and *cleared* categories to No.

1. From the Insert New Records screen, press Open-Apple V.
   "SET STANDARD VALUES" will appear at the top of the screen.

2. With the cursor on the DATE category, type: FEB ...................... press **RETURN**

3. Move the cursor to the TAX DED? category.

4. Type: NO ............................................................... press **RETURN**

5. After the category CLEARED?, type: NO ................................ press **RETURN**
   (Ignore the beep; you are at the last category.)
6. Use the Up Arrow key to move the cursor back to the DATE category.

7. Now press Escape to return to the Insert New Records screen.
   (Note: Only the heading on the screen will change.)

**NOTE**: If you accidentally press Escape more than once you will return to the Review/Add/Change screen. If this occurs, type Open-Apple I to get the Insert New Records screen.

8. Information for the first record can now be entered.

## PART 4: ENTERING DATA

Information for six checks is listed below. Enter information for each check from the Insert New Records screen. Note that as each new record is displayed, standard value entries will be automatically entered.

1. To enter the date, leave the cursor on the F of FEB, merely type the day, and press Return.

**NOTE**: Because the key word *date* was used in the category name *AppleWorks* will convert your entry into its standard date format. This makes comparisons and sorting easier.

2. Use Open-Apple Y to change a standard value entry (e.g., No to Yes).
3. When the six checks have been entered, move through the entries on both the single- and multiple-record screens.

```
DATE      CHECK #  PAID TO           AMOUNT    CATEGORY       MEMO          TAX DED ? CLEARED ?
--------- -------- ----------------- --------- -------------- ------------- --------- ----------
Feb  1    1001     FRIENDLY FINANCE  598.00    MORTGAGE                     YES       NO
Feb  1    1002     WILLAMETTE WATER  19.25     UTILITIES      9 CU FT       NO        NO
Feb  1    1003     NORTHWEST POWER   74.89     UTILITIES      2001 KWH      NO        NO
Feb  1    1004     LATCHKEY          98.00     CHILD CARE     JAN CARE      YES       NO
Feb  2    1005A    CITY BANK         58.00     LOAN PAYMENT   STUDENT LOAN  NO        NO
Feb  2    1005B    CITY BANK         50.45     LOAN PAYMENT   WEATHER LOAN  NO        NO
```

## PART 5: COMBINING DATABASE FILES (Open-Apple C)

In order to work with more checks we will add a second check file (CHECKS) to the Desktop and transfer a copy of those records into the FEB CHECKS file.

1. Escape to the Main Menu.
2. Select: 1. Add files to the Desktop........................................ press **RETURN**
3. Select: 1. Get files from: Current Disk.................................. press **RETURN**
4. Select: --> CHECKS ...................................................... press **RETURN**

A database file with 20 more February checks is now on the Desktop.

5. With the cursor on the first record (check 1006 to Albertsons), press Open-Apple C.
6. Select: To Clipboard.
7. We will copy every record. Use the Down Arrow key or Open-Apple 9 to highlight all the records.
8. Press Return.

A copy of the entire database file is now on the clipboard.

9. Press Open-Apple Q (for a Quick switch).
10. Highlight: FEB CHECKS ................................................ press **RETURN**
11. If you find yourself in the single-record layout, press Open-Apple Z to zoom to the multiple-record screen.
12. Have the cursor on the last record (FEB 2, CITY BANK).
13. Press Open-Apple C.
14. Select: From Clipboard.

Your FEB CHECKS file should now contain 26 checkbook entries for February.

**NOTE**: The process for copying or moving records between database files is quite simple. The main steps include:

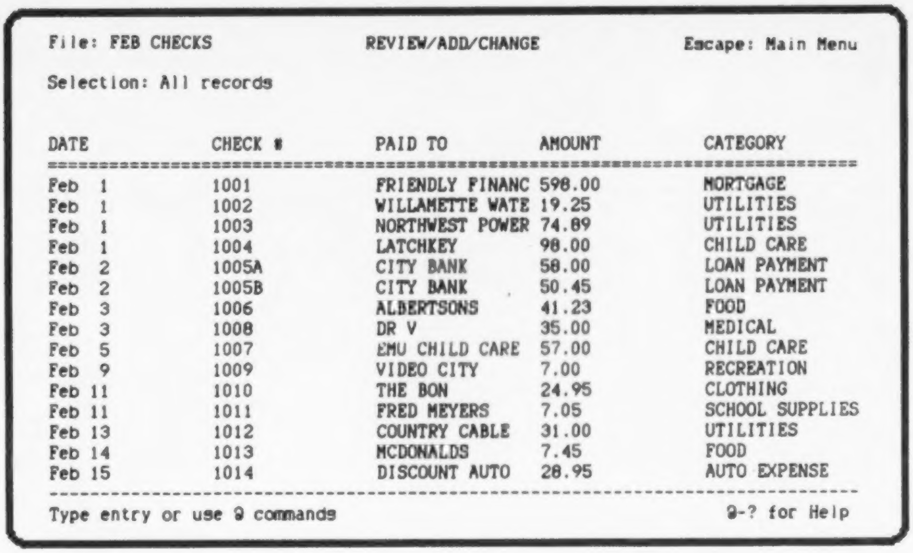
- Having both databases on the Desktop;
- Making sure you are in the multiple-record layout for both copying (or moving) to and from the clipboard;
- Highlighting the records you want to copy or move;
- Switching to the file you intend to paste records into; and
- Again using Open-Apple C or Open-Apple M.

Remember, records that are *copied* to the clipboard remain intact in your original file. Records that are *moved* to the clipboard and then pasted into another file no longer exist in your original file.

## PART 6: ARRANGING DATABASE RECORDS (Open-Apple A)

When database records were pasted into this file the FEB 2 CITY BANK record became the last entry. This is not a problem because we can quickly reorganize the arrangement of the records with Open-Apple A.

1. Move the cursor to the DATE column.
2. Press Open-Apple A.
3. Arrange this DATE file in chronological order.
4. The screen should show:



```
File: FEB CHECKS            REVIEW/ADD/CHANGE           Escape: Main Menu

Selection: All records

DATE           CHECK #        PAID TO         AMOUNT          CATEGORY
===========================================================================
Feb  1         1001           FRIENDLY FINANC 598.00          MORTGAGE
Feb  1         1002           WILLAMETTE WATE 19.25           UTILITIES
Feb  1         1003           NORTHWEST POWER 74.89           UTILITIES
Feb  1         1004           LATCHKEY        98.00           CHILD CARE
Feb  2         1005A          CITY BANK       58.00           LOAN PAYMENT
Feb  2         1005B          CITY BANK       50.45           LOAN PAYMENT
Feb  3         1006           ALBERTSONS      41.23           FOOD
Feb  3         1008           DR V            35.00           MEDICAL
Feb  5         1007           EMU CHILD CARE  57.00           CHILD CARE
Feb  9         1009           VIDEO CITY      7.00            RECREATION
Feb 11         1010           THE BON         24.95           CLOTHING
Feb 11         1011           FRED MEYERS     7.05            SCHOOL SUPPLIES
Feb 13         1012           COUNTRY CABLE   31.00           UTILITIES
Feb 14         1013           MCDONALDS       7.45            FOOD
Feb 15         1014           DISCOUNT AUTO   28.95           AUTO EXPENSE
---------------------------------------------------------------------------
Type entry or use 9 commands                                   9-? for Help
```

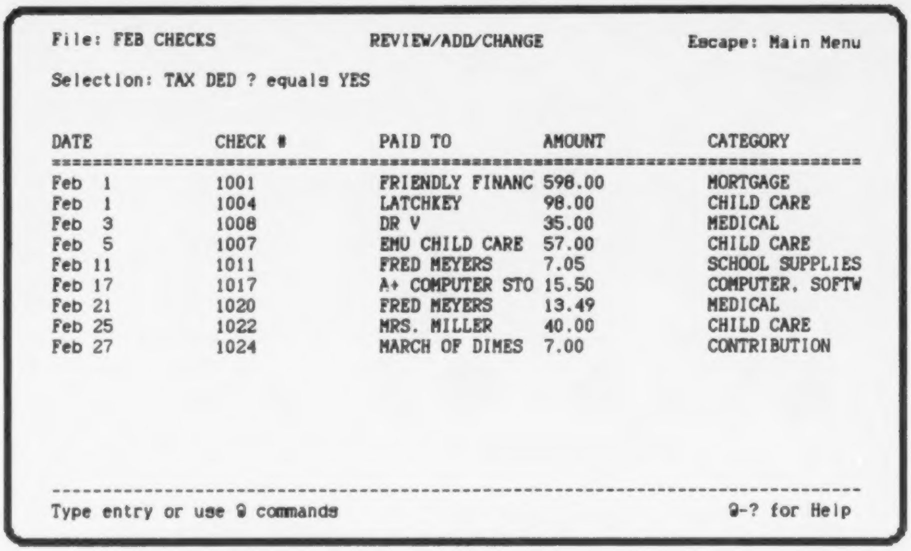
## PART 7: FREEZING TITLES (Open-Apple T)

When working on a multiple-record screen that has many categories, moving the cursor to the right often causes scrolling. Version 3.0 now provides a command allowing us to freeze left-hand columns, a feature we have seen in the spreadsheet. We can freeze one or more left side categories. For this database we will freeze both the DATE and CHECK # columns.

1. Move the cursor to the PAID TO category.
2. Press Open-Apple T (to freeze Title).
3. Press Return to freeze the titles.
4. Now move the cursor to each column.
5. Press Open-Apple T to unfreeze the titles.

## PART 8: SELECTING RECORDS (Open-Apple R)

1. As a review, write a record selection rule so only checks entered as tax deductible appear on the screen.
2. Move the cursor to the TAX DED ? column.
3. Do you agree that 9 checks have been entered as tax deductible?
4. Use the Layout command to widen the PAID TO column and reorganize the category order to display the following Review/Add/Change screen:



```
File: FEB CHECKS             REVIEW/ADD/CHANGE              Escape: Main Menu

Selection: TAX DED ? equals YES


DATE           CHECK #        PAID TO        AMOUNT         CATEGORY
=============================================================================
Feb  1         1001           FRIENDLY FINANC 598.00        MORTGAGE
Feb  1         1004           LATCHKEY        98.00         CHILD CARE
Feb  3         1008           DR V            35.00         MEDICAL
Feb  5         1007           EMU CHILD CARE  57.00         CHILD CARE
Feb 11         1011           FRED MEYERS     7.05          SCHOOL SUPPLIES
Feb 17         1017           A+ COMPUTER STO 15.50         COMPUTER, SOFTW
Feb 21         1020           FRED MEYERS     13.49         MEDICAL
Feb 25         1022           MRS. MILLER     40.00         CHILD CARE
Feb 27         1024           MARCH OF DIMES  7.00          CONTRIBUTION






-----------------------------------------------------------------------------
Type entry or use 9 commands                                       9-? for Help
```

5. Press Open-Apple R to bring all records back onto the screen.
6. For the question "Select all records," select : YES

## PART 9: ADDING DATABASE CATEGORIES (Open-Apple N)

Next we will add one more category to this file: MONTHLY DEPOSITS.

1. Display the database in the multiple-record layout.
2. Press Open-Apple N (for Name or Category Change).
   The Change Name/Category screen will appear.
3. While the cursor is at the bottom of the screen, the filename can be changed. We will continue to use the same filename, so press Return.
4. Move the cursor to the line under CLEARED?.
5. Type: DEPOSIT ............................................................ press **RETURN**
6. For the next question, select: Yes ........................................ press **RETURN**
   We moved the PAID TO category in this FEB CHECKS file, and it has now been returned to its original position.

- New category names can be added to the end of the list. They can also be added anywhere within the list by moving the cursor to an existing category, pressing Open-Apple I, and typing on the blank line that is inserted.
- Adding or deleting category names will erase all report formats—e.g., screen layout adjustments or report formats for printouts—from a file.
- Category names can be permanently deleted from a file while on the Change Name/Category screen, by using Open-Apple D.

In Activity 5 we will take a closer look at making category changes.

7. Press Escape to return to the multiple-record screen, and note the screen layout.

## PART 10: INSERTING DATABASE RECORDS (Open-Apple I)

Two deposit entries will be added. Information for these entries will be recorded in the DATE and DEPOSIT categories.

1. Press Open-Apple I (to Insert a Record).
   "INSERT NEW RECORDS" will appear at the top of the screen.

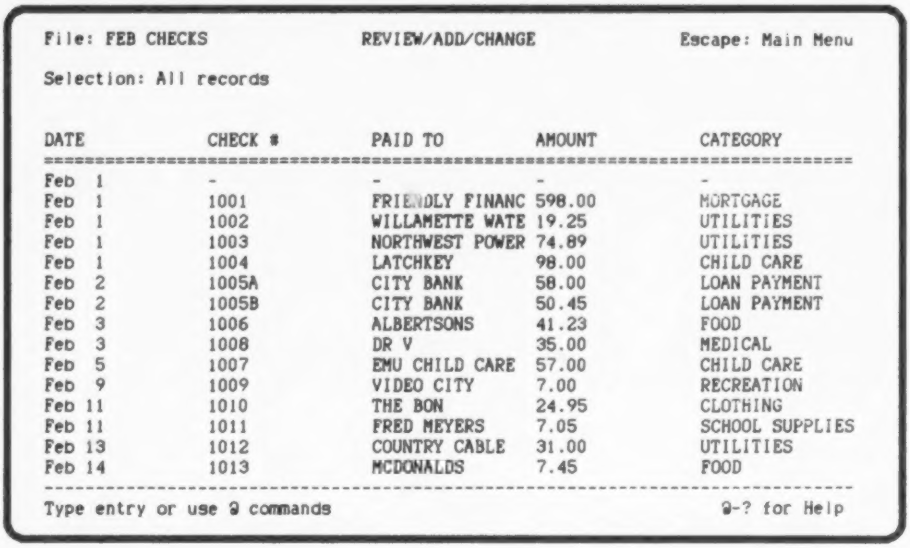
2. For DATE, enter: Feb 1
   For DEPOSIT, enter: 1675.35 .......................................... press **RETURN**

3. In the next blank record:
   For DATE, enter: Feb 15
   For DEPOSIT, enter: 489.77 .......................................... press **RETURN**

4. Escape to the multiple-record screen.

5. Arrange by DATE.

Your screen should now look like this:



```
File: FEB CHECKS               REVIEW/ADD/CHANGE             Escape: Main Menu

Selection: All records


DATE            CHECK #         PAID TO         AMOUNT          CATEGORY
==============================================================================
Feb  1          -               -               -               -
Feb  1          1001            FRIENDLY FINANC 598.00          MORTGAGE
Feb  1          1002            WILLAMETTE WATE 19.25           UTILITIES
Feb  1          1003            NORTHWEST POWER 74.89           UTILITIES
Feb  1          1004            LATCHKEY        98.00           CHILD CARE
Feb  2          1005A           CITY BANK       58.00           LOAN PAYMENT
Feb  2          1005B           CITY BANK       50.45           LOAN PAYMENT
Feb  3          1006            ALBERTSONS      41.23           FOOD
Feb  3          1008            DR V            35.00           MEDICAL
Feb  5          1007            EMU CHILD CARE  57.00           CHILD CARE
Feb  9          1009            VIDEO CITY      7.00            RECREATION
Feb 11          1010            THE BON         24.95           CLOTHING
Feb 11          1011            FRED MEYERS     7.05            SCHOOL SUPPLIES
Feb 13          1012            COUNTRY CABLE   31.00           UTILITIES
Feb 14          1013            MCDONALDS       7.45            FOOD
------------------------------------------------------------------------------
Type entry or use @ commands                                      @-? for Help
```

6. To see the deposit entries again, freeze the DATE and CHECK # category columns.
7. We have made a lot of changes to the original FEB CHECKS file. Save your work before proceeding to the next activity.

# ACTIVITY 4
# PRINTING TABLE REPORTS

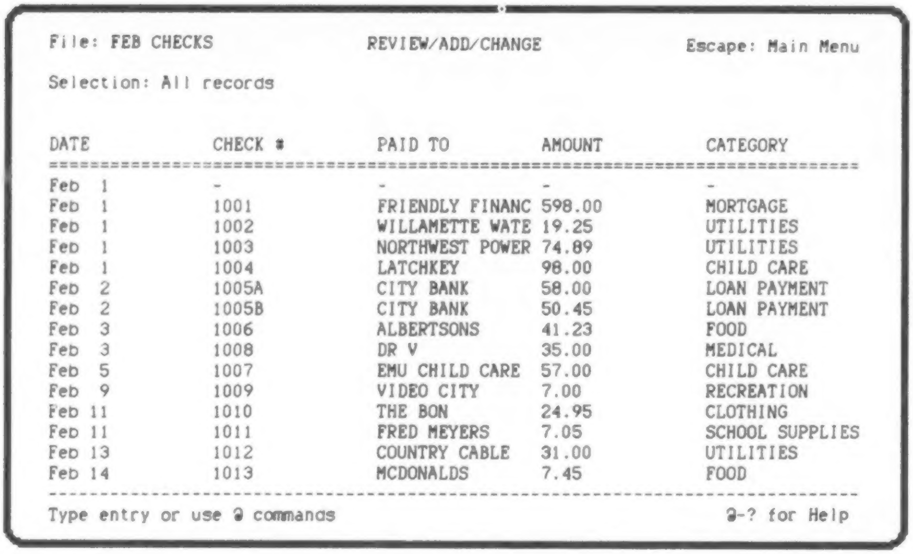
In this activity we will continue to use the FEB CHECKS file and to further examine the printer options and commands that can affect database printouts. In Activity 2 you learned that to print a database report you first set up a report format. *AppleWorks* provides two format styles: a labels format that resembles the single-record screen layout, or a tables format, which resembles the multiple-record screen layout.

Thus far you have worked with the labels format. In this activity you will learn to set up a tables format. In Activity 5 you will learn how to include more report features.

To begin, if you do not have your FEB CHECKS file on the screen do the following:

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop ........................................ press **RETURN**
3. Select: 1. The Current Disk .................................................. press **RETURN**
4. Select: --> FEB CHECKS...................................................... press **RETURN**

The following database should now be on the screen:



```
File: FEB CHECKS              REVIEW/ADD/CHANGE              Escape: Main Menu

Selection: All records


DATE            CHECK #         PAID TO         AMOUNT          CATEGORY
================================================================================
Feb  1          -               -               -               -
Feb  1          1001            FRIENDLY FINANC 598.00          MORTGAGE
Feb  1          1002            WILLAMETTE WATE 19.25           UTILITIES
Feb  1          1003            NORTHWEST POWER 74.89           UTILITIES
Feb  1          1004            LATCHKEY        98.00           CHILD CARE
Feb  2          1005A           CITY BANK       58.00           LOAN PAYMENT
Feb  2          1005B           CITY BANK       50.45           LOAN PAYMENT
Feb  3          1006            ALBERTSONS      41.23           FOOD
Feb  3          1008            DR V            35.00           MEDICAL
Feb  5          1007            EMU CHILD CARE  57.00           CHILD CARE
Feb  9          1009            VIDEO CITY      7.00            RECREATION
Feb 11          1010            THE BON         24.95           CLOTHING
Feb 11          1011            FRED MEYERS     7.05            SCHOOL SUPPLIES
Feb 13          1012            COUNTRY CABLE   31.00           UTILITIES
Feb 14          1013            MCDONALDS       7.45            FOOD
--------------------------------------------------------------------------------
Type entry or use @ commands                                         @-? for Help
```

To print an *AppleWorks* report you follow these steps:

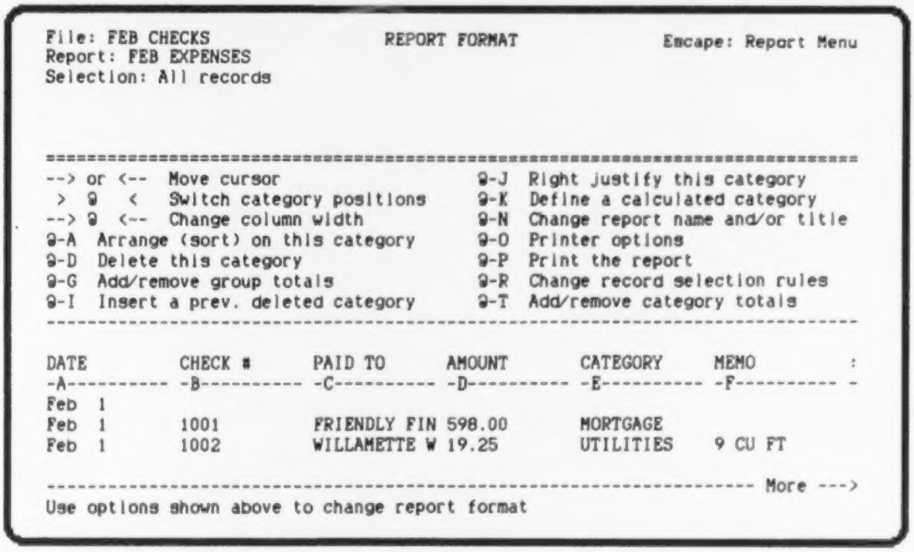
- Begin with the print command, Open-Apple P;
- Either select or create a tables report format;
- Make adjustments (e.g., alphabetize records, change column widths, etc);
- Press Open-Apple P again to print the report to the screen;
- Make additional adjustments if necessary; then
- Print to the printer.

## PART 1: CREATING A TABLE FORMAT (Open-Apple P)

We will print February checks and deposits using the tables format. Column widths will be adjusted so all information can be displayed in the printed report.

1. Press Open-Apple P.
2. Select: 2. Create a New Tables Format.................................... press **RETURN**
3. Select: 1. From scratch...................................................... press **RETURN**
4. For report name, type: FEB EXPENSES ................................. press **RETURN**

The report format for table reports should now be on screen:



```
File: FEB CHECKS                REPORT FORMAT              Escape: Report Menu
Report: FEB EXPENSES
Selection: All records



===============================================================================
--> or <--  Move cursor                    @-J  Right justify this category
 >  @   <   Switch category positions      @-K  Define a calculated category
--> @  <--  Change column width            @-N  Change report name and/or title
@-A  Arrange (sort) on this category       @-O  Printer options
@-D  Delete this category                  @-P  Print the report
@-G  Add/remove group totals               @-R  Change record selection rules
@-I  Insert a prev. deleted category       @-T  Add/remove category totals
-------------------------------------------------------------------------------

DATE         CHECK #      PAID TO      AMOUNT       CATEGORY     MEMO         :
-A---------- -B---------- -C---------- -D---------- -E---------- -F---------- -
Feb  1
Feb  1       1001         FRIENDLY FIN 598.00       MORTGAGE
Feb  1       1002         WILLAMETTE W 19.25        UTILITIES    9 CU FT

--------------------------------------------------------------------- More --->
Use options shown above to change report format
```

The Report Format menu screen contains several of the same options that are available for adjusting a screen layout.

- The bottom of the screen again displays example records from the database. Column widths and category positions can be adjusted and viewed here. You cannot make any changes to these records, however—they are for reference only.
- The middle of the screen displays the Open-Apple commands (shown as @-A, @-D, etc.) that can be used to affect how a printed tables report will appear. Many of the options you learned in Activity 1 using Open-Apple L (Layout) (e.g., switching category positions, changing column widths, temporarily deleting a category from view, etc.) are displayed here and can be used in report formats as well.
- Printed reports can contain records that have been arranged or selected. In addition, category and group totals can be displayed.
- When moving the cursor to the last category (DEPOSITS in column J), a LEN indicator will be displayed on screen. Similiar to the MARGIN indicator on the Layout screen, this indicates how many spaces per line the database will require. If this database were printed right now, it would require 130 characters per line. We will refer to this LEN indicator again in the next section.

## PART 2: CHANGING COLUMN WIDTHS (Open-Apple --> or <--) HIDING CATEGORIES FROM A REPORT (Open-Apple D)

We will adjust column widths, increasing some so all information can be displayed on the printout, decreasing others to remove extra spaces. We adjust the column width for a printed report just as we do for screen viewing, with the Open-Apple --> or <--.

1. Decrease columns A and B (DATE and CHECK #) by 3 characters.
2. Increase column C (PAID TO) 4 characters.
3. Increase column E (CATEGORY) 8 characters.
4. Increase column F (MEMO) 3 characters.

We do not need to include every category of the database in this report, so we will use the Hide command. Hidden categories will remain in the database file but will not appear in the printed report.

5. Move the cursor to column G ( : ).
6. Press Open-Apple D.

## PART 3: SWITCHING CATEGORY POSITIONS (Open-Apple < or > )

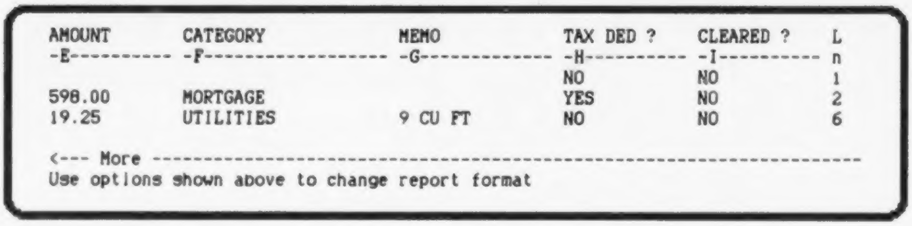
With the present layout, deposit entries will be printed in the last column. We can change category positions for a printed report just as we can for screen viewing, with the Open-Apple > or <.

1. Using an Arrow key, place the cursor in column I ( DEPOSIT).
2. Hold down the Open-Apple key and tap the < key (Less Than symbol). Note that the categories DEPOSIT and CLEARED ? have switched positions.
3. Again hold down the Open-Apple key, tap the < key, and move the DEPOSIT category one position further to the left.
4. Repeat this process until DEPOSIT is in column D.

## PART 4: SETTING PRINTER OPTIONS FOR A TABLE REPORT (Open-Apple O)

If we want an entire record to appear on one printed line, sometimes adjustments must be made. Like the word processor and spreadsheet, the database printer settings can affect printout details such as margins, size of paper, characters per line.

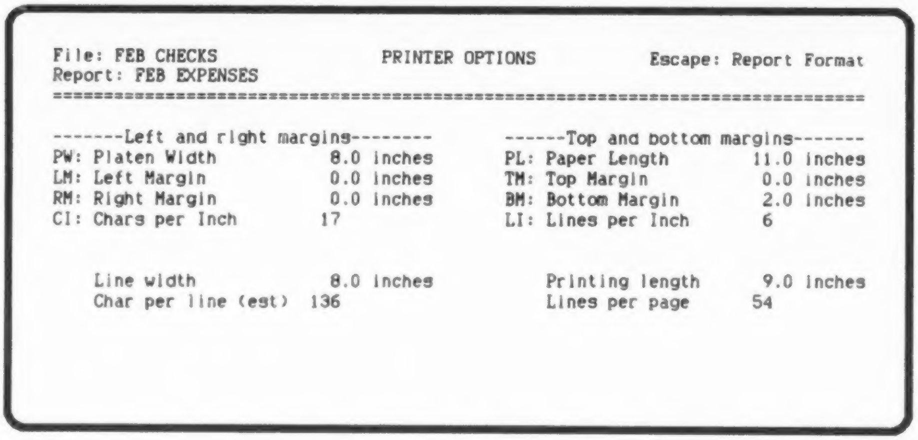
1. Tab past the last category (CLEARED ?) and note the LEN indicator:



```
AMOUNT     CATEGORY           MEMO          TAX DED ?   CLEARED ?   L
-E-------- -F---------------- -G----------- -H--------- -I--------- n
                                            NO          NO          1
598.00     MORTGAGE                         YES         NO          2
19.25      UTILITIES          9 CU FT       NO          NO          6

<--- More -------------------------------------------------------------
Use options shown above to change report format
```

- According to the LEN indicator, each database record now requires 126 characters per line.
- As with the spreadsheet, the default CI (characters-per-inch) setting is 10, allowing only 80 characters per line.
- To allow more characters per inch, change the CI setting in the Printer Options menu.

2. Press Open-Apple O.
3. At the bottom of the screen type: CI ....................................... press **RETURN**
4. Next type: 17 ................................................................ press **RETURN**
5. Note the characters per line (estimate):



```
File: FEB CHECKS                PRINTER OPTIONS          Escape: Report Format
Report: FEB EXPENSES
==============================================================================

-------Left and right margins--------      ------Top and bottom margins-------
PW: Platen Width            8.0 inches     PL: Paper Length        11.0 inches
LM: Left Margin             0.0 inches     TM: Top Margin           0.0 inches
RM: Right Margin            0.0 inches     BM: Bottom Margin        2.0 inches
CI: Chars per Inch        17               LI: Lines per Inch       6


    Line width              8.0 inches         Printing length      9.0 inches
    Char per line (est)  136                   Lines per page      54
```

When printed at 17 characters per inch, information in all the columns (125 characters) will now fit on one line.

**NOTE**: If you designate a certain number of characters per inch, but your printer can't actually print that way, *AppleWorks* reverts to the characters per inch you last printed with. Seventeen characters per inch is a standard setting that most printers accept.

6. For this report we will include a report Header (filename, report name) at the top of each page. The PH setting will remain *Yes*.
7. Change both top and bottom margin settings to .5 inch, and press Return.
8. Press Escape to return to the Report Format menu.

## PART 5: VIEWING THE REPORT ON SCREEN (Open-Apple P)

We can view a database table report on the screen. If any categories appear crowded or incomplete, we can adjust column widths or category positions before printing. If the information would be better organized chronologically rather than alphabetically, we can use the Arrange command on the Report Format screen, then again view the report on screen prior to printing.

Note however, when the LEN setting is greater than 80, some of the last columns cannot be viewed on the screen.

1. Move the cursor to column A (DATE).
2. Press Open-Apple P.
3. Select: The screen.......................................................... press **RETURN**
4. Type the date followed by Return, or just press Return.

Now you can view the report for the first 80 characters.

5. Press the Space Bar to view the second page of records.
6. When you return to the Report Format screen, make any necessary column-width adjustments. With a CI setting of 17, you can increase columns up to a maximum length of 136.

## PART 6: PRINTING A CATEGORY TOTAL (Open-Apple T)

*AppleWorks* provides a very handy report calculation feature that can be used with categories containing numbers. With Open-Apple T (Total) the values in a column can be totaled and included in the printout. We will use this feature to get totals for February deposits and check amounts.

1. Make sure you have the Report Format menu on the screen.

2. Place the cursor on the AMOUNT column.

3. Press Open-Apple T.

4. Note the bottom of the screen. You can determine the number of decimal places for the category.

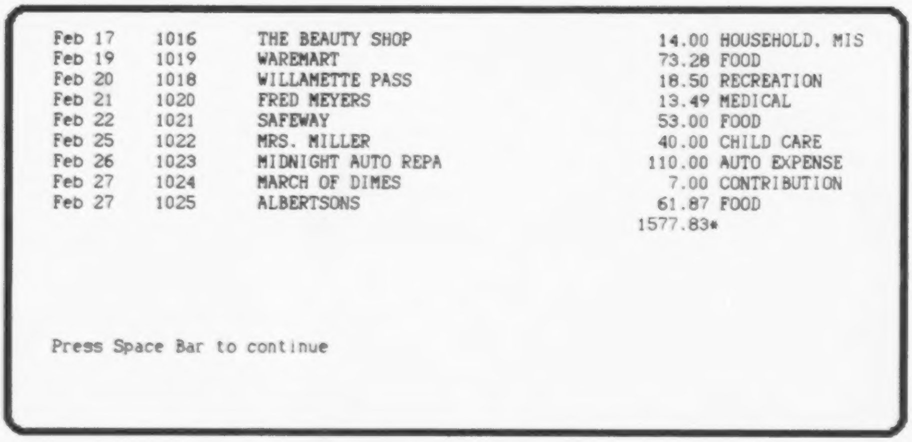
5. For number of decimal places, type: 2 ...................................... press **RETURN**

6. Again note the bottom of the screen. You can determine how many blank spaces to allow after the entry.

7. For number of blank places, press Return to accept 1 space.

A double dashed line (= = = ) will appear *under* column E indicating that this column will display a total. The values in column E have been replaced with a series of 99999.99s, indicating where numbers and decimal points will appear in the report.

8. Print this report to the screen and view the last entry.



```
Feb 17    1016     THE BEAUTY SHOP                          14.00 HOUSEHOLD. MIS
Feb 19    1019     WAREMART                                 73.28 FOOD
Feb 20    1018     WILLAMETTE PASS                          18.50 RECREATION
Feb 21    1020     FRED MEYERS                              13.49 MEDICAL
Feb 22    1021     SAFEWAY                                  53.00 FOOD
Feb 25    1022     MRS. MILLER                              40.00 CHILD CARE
Feb 26    1023     MIDNIGHT AUTO REPA                      110.00 AUTO EXPENSE
Feb 27    1024     MARCH OF DIMES                            7.00 CONTRIBUTION
Feb 27    1025     ALBERTSONS                               61.87 FOOD
                                                          1577.83*



Press Space Bar to continue
```

9. Set column D (DEPOSIT) to also contain a total.

- To turn off the totals, place the cursor on the column and again type Open-Apple T. Information from your sample records will replace the 9's.
- If your column is not wide enough to contain the total, then *AppleWorks* will print a row of number signs (######). You will need to use Open-Apple and the Right Arrow key to make the column wider.

10. Take a moment to save this file. All the settings within the FEB EXPENSES report format will also be saved at this time.

## PART 7: PRINTING GROUP TOTALS (Open-Apple G)

*AppleWorks* provides another feature which can enhance this report. The Open-Apple G command (for Group Totals) enables you to cluster records by groups. If you have set up your columns with the Open-Apple T command, each group will contain its own subtotal. Try this:

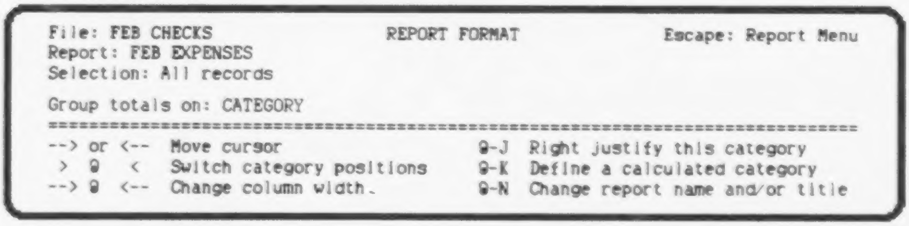
1. Return to the Report Format screen for the FEB EXPENSES report.
2. With the cursor on column F, press Open-Apple G.

Note the bottom of the screen. Do we want just subtotals on the report? No, we want information about each check, as well as the subtotals.

3. For "Print group totals only?" select: No.

Do we want to go to a new page after each subtotal? No, we'll have all records and subtotals on one page.

4. For "Go to a new page after each group total?" select: No.
5. Note that "Group totals on: CATEGORY" is now displayed under the report header:

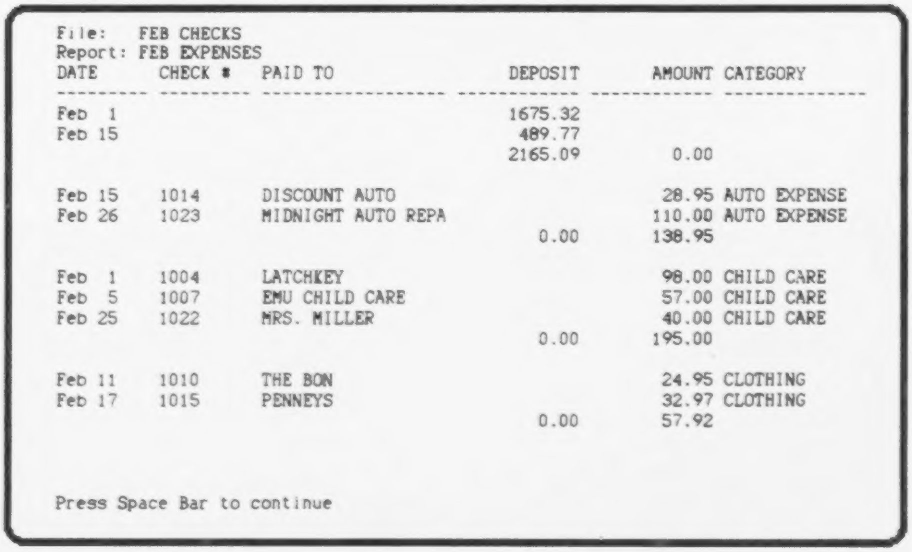


```
File: FEB CHECKS                REPORT FORMAT               Escape: Report Menu
Report: FEB EXPENSES
Selection: All records

Group totals on: CATEGORY
===============================================================================
--> or <--  Move cursor                    @-J  Right justify this category
 >  @   <   Switch category positions      @-K  Define a calculated category
--> @ <--   Change column width.           @-N  Change report name and/or title
```

6. The Report Format screen now indicates that *subtotals* will be calculated for each major grouping in column F (CATEGORY).

> **NOTE**: We want check records divided into similiar categories (e.g., all FOOD entries together). To ensure that all food entries are totaled together, Column F **must** be alphabetized. As mentioned in Activity 1 arranging is an important command when working with database records and reports. Identical entries must appear together if group totals and subtotals are to be calculated correctly.

7. Move the cursor to column F (CATEGORY).
8. Press Open-Apple A and arrange CATEGORY from A to Z.
9. Print to the screen and examine how this report will appear when printed.



```
File:   FEB CHECKS
Report: FEB EXPENSES
DATE      CHECK #   PAID TO                  DEPOSIT       AMOUNT CATEGORY
--------- --------- ------------------- ------------ ------------ --------------
Feb  1                                       1675.32
Feb 15                                        489.77
                                             2165.09         0.00

Feb 15    1014      DISCOUNT AUTO                           28.95 AUTO EXPENSE
Feb 26    1023      MIDNIGHT AUTO REPA                     110.00 AUTO EXPENSE
                                                0.00       138.95

Feb  1    1004      LATCHKEY                                98.00 CHILD CARE
Feb  5    1007      EMU CHILD CARE                          57.00 CHILD CARE
Feb 25    1022      MRS. MILLER                             40.00 CHILD CARE
                                                0.00       195.00

Feb 11    1010      THE BON                                 24.95 CLOTHING
Feb 17    1015      PENNEYS                                 32.97 CLOTHING
                                                0.00        57.92


Press Space Bar to continue
```

Records have been grouped by their category entry. Subtotal amounts for each category now appear in the report. The last entry in the report will show the total for both deposits and check amounts.

10. When back at the Report Format screen, again press Open-Apple G. Note the middle of the screen: Now the grouping command has been turned off.

11. With the cursor on column F, again press Open-Apple G. When prompted, "Go to a... new page after each group total?" select: Yes.

12. Print to the screen. First you will see a *page* of deposits.

13. Then press the Space Bar to see a *page* of auto expense records. Continue viewing each page of checks. Return to the Report Format screen.

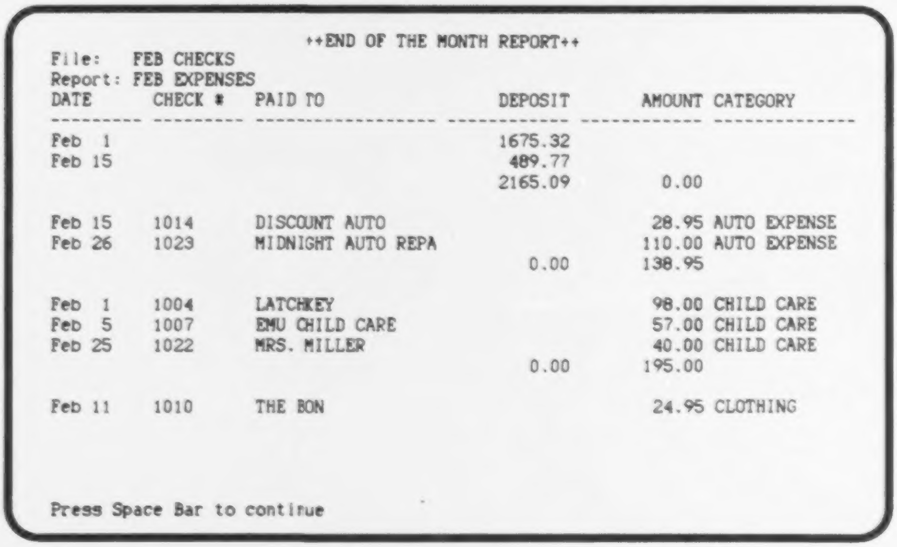
14. When back at the Report Format screen, again press Open-Apple G. Note the middle of the screen. Again the grouping command has been turned off.

15. Reinstate the group totals by repeating steps two through four.

## PART 8: CREATING A REPORT TITLE (Open-Apple N)

When printed, this report will contain the file name (FEB CHECKS) and the report name (FEB EXPENSES). Our printed report can contain a customized title.

1. Press Open-Apple N (for Name and/or Title Change).
2. Press Return to keep the same report name.
3. Note the cursor *above* column A and above DATE.
4. Tap the Space Bar 25 times.
5. Now type: ++ END OF THE MONTH REPORT ++.................. press **RETURN**
6. Print to the screen. Note the report title:



```
                         ++END OF THE MONTH REPORT++
File:   FEB CHECKS
Report: FEB EXPENSES
DATE      CHECK #   PAID TO                 DEPOSIT       AMOUNT CATEGORY
--------- --------- ------------------ ------------ ------------ --------------
Feb  1                                      1675.32
Feb 15                                       489.77
                                            2165.09         0.00

Feb 15    1014      DISCOUNT AUTO                          28.95 AUTO EXPENSE
Feb 26    1023      MIDNIGHT AUTO REPA                    110.00 AUTO EXPENSE
                                               0.00       138.95

Feb  1    1004      LATCHKEY                               98.00 CHILD CARE
Feb  5    1007      EMU CHILD CARE                         57.00 CHILD CARE
Feb 25    1022      MRS. MILLER                            40.00 CHILD CARE
                                               0.00       195.00

Feb 11    1010      THE BON                                24.95 CLOTHING



Press Space Bar to contirue
```

7. Save this file.

## PART 9: PRINTING A REPORT TO THE PRINTER (Open-Apple P)

Move to a computer with a printer. Load *AppleWorks* and add the FEB CHECKS database to the Desktop.

1. Adjust the printer paper so the top perforation is at the bar.
2. Turn on the printer and make sure the Select light is on.
3. Press Open-Apple P.
4. Select: 1. Get a report format ............................................. press **RETURN**
5. Select: FEB EXPENSES .................................................. press **RETURN**
6. From the Report Format screen, press Open-Apple P.
7. Select your printer from the menu.
8. Check the date and press Return.
9. For how many copies? select: 1
10. Print this report. Does it resemble the one on the following page?
11. Save your work. We will return to this file in Activity 6 when we learn to print database records to a word processor file.

```
                                                                                              Page 1
                        ++END OF THE MONTH REPORT++
File:   FEB CHECKS
Report: FEB EXPENSES
DATE      CHECK #   PAID TO            DEPOSIT       AMOUNT CATEGORY              MEMO          TAX DED ?   CLEARED ?
--------- --------- ------------------ ------------ ------------ -------------------- ------------- ----------- -----------
Feb  1                                     1675.32                                              NO          NO
Feb 15                                      489.77                                              NO          NO
                                           2165.09         0.00

Feb 15    1014      DISCOUNT AUTO                         28.95 AUTO EXPENSE          HEADLIGHTS    NO          NO
Feb 26    1023      MIDNIGHT AUTO REPA                   110.00 AUTO EXPENSE          WHEEL BEARING NO          NO
                                              0.00       138.95

Feb  1    1004      LATCHKEY                              98.00 CHILD CARE            JAN CARE      YES         NO
Feb  5    1007      EMU CHILD CARE                        57.00 CHILD CARE            JAN CARE      YES         NO
Feb 25    1022      MRS. MILLER                           40.00 CHILD CARE            EVENING CARE  YES         NO
                                              0.00       195.00

Feb 11    1010      THE BON                               24.95 CLOTHING              LP PANTS      NO          NO
Feb 17    1015      PENNEYS                               32.97 CLOTHING              SCHOOL CLOTHES NO         NO
                                              0.00        57.92

Feb 17    1017      A+ COMPUTER STORE                     15.50 COMPUTER, SOFTWARE    DATA DISKS    YES         NO
                                              0.00        15.50

Feb 27    1024      MARCH OF DIMES                         7.00 CONTRIBUTION                        YES         NO
                                              0.00         7.00

Feb  3    1006      ALBERTSONS                            41.23 FOOD                                NO          NO
Feb 14    1013      MCDONALDS                              7.45 FOOD                  LUNCH         NO          NO
Feb 19    1019      WAREMART                              73.28 FOOD                                NO          NO
Feb 22    1021      SAFEWAY                               53.00 FOOD                                NO          NO
Feb 27    1025      ALBERTSONS                            61.87 FOOD                                NO          NO
                                              0.00       236.83

Feb 17    1016      THE BEAUTY SHOP                       14.00 HOUSEHOLD, MISC       HAIR CUT      NO          NO
                                              0.00        14.00

Feb  2    1005A     CITY BANK                             58.00 LOAN PAYMENT          STUDENT LOAN  NO          NO
Feb  2    1005B     CITY BANK                             50.45 LOAN PAYMENT          WEATHER LOAN  NO          NO
                                              0.00       108.45

Feb  3    1008      DR V                                  35.00 MEDICAL               DOCTOR        YES         NO
Feb 21    1020      FRED MEYERS                           13.49 MEDICAL               COLD PILLS    YES         NO
                                              0.00        48.49

Feb  1    1001      FRIENDLY FINANCE                     598.00 MORTGAGE                            YES         NO
                                              0.00       598.00

Feb  9    1009      VIDEO CITY                             7.00 RECREATION            VIDEO RENTAL  NO          NO
Feb 20    1018      WILLAMETTE PASS                       18.50 RECREATION                          NO          NO
                                              0.00        25.50

Feb 11    1011      FRED MEYERS                            7.05 SCHOOL SUPPLIES       BULLETIN BOARD YES        NO
                                              0.00         7.05

Feb  1    1002      WILLAMETTE WATER                      19.25 UTILITIES             9 CU FT       NO          NO
Feb  1    1003      NORTHWEST POWER                       74.89 UTILITIES             2001 KWH      NO          NO
Feb 13    1012      COUNTRY CABLE                         31.00 UTILITIES             CABLE TV      NO          NO
                                              0.00       125.14

                                           2165.09*     1577.83*
```

# ACTIVITY 5
# PRINTING A DATABASE REPORT WITH CALCULATED CATEGORIES

While preparing reports for the FEB CHECKS database we examined many of the *AppleWorks* formatting options available for customizing table reports. These options allowed us to:

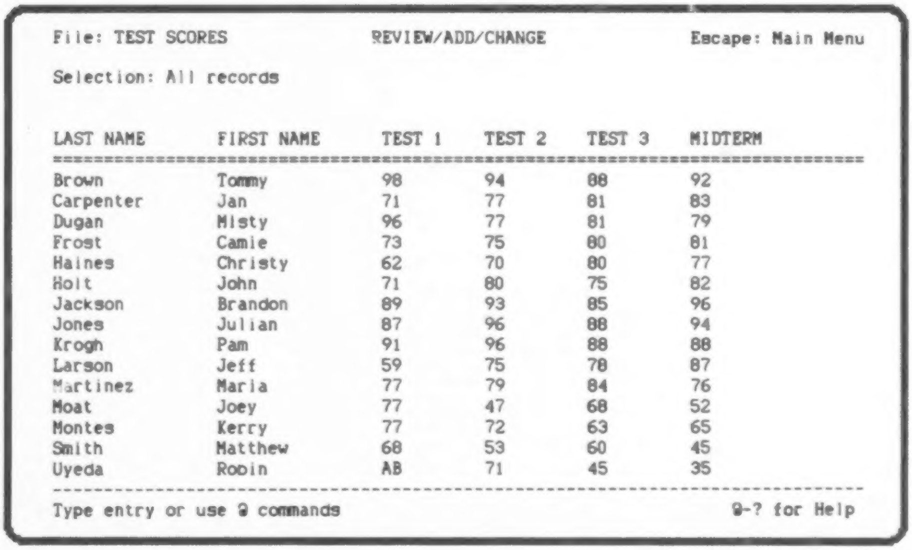
- Arrange information;
- Select information;
- Delete one or more categories from a report;
- Insert previously deleted categories;
- Add or remove category totals;
- Add or remove group totals;
- Include a report title; and
- Print a report to the screen or printer.

In this exercise we will work with a database containing student grades for several tests and a midterm exam. While the *AppleWorks* database cannot carry out as sophisticated calculations as the spreadsheet, it does have the capability to perform basic calculations. In this activity we will learn to create a new column containing the students' average test scores. Because *AppleWorks* allows up to three such "calculated categories" per report format, we will also set up a column to weight the midterm exam to equal two tests. Finally, we will learn the process for adding and deleting non-calculated categories.

## PART 1: ADDING A DATABASE FILE TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop.
3. Select: 1. Get file from Current Disk.
4. Select: TEST SCORES.

5. A database containing test scores for 15 students should now be on the screen:



```
File: TEST SCORES              REVIEW/ADD/CHANGE              Escape: Main Menu

Selection: All records

LAST NAME       FIRST NAME      TEST 1    TEST 2    TEST 3    MIDTERM
===============================================================================
Brown           Tommy           98        94        88        92
Carpenter       Jan             71        77        81        83
Dugan           Misty           96        77        81        79
Frost           Camie           73        75        80        81
Haines          Christy         62        70        80        77
Holt            John            71        80        75        82
Jackson         Brandon         89        93        85        96
Jones           Julian          87        96        88        94
Krogh           Pam             91        96        88        88
Larson          Jeff            59        75        78        87
Martinez        Maria           77        79        84        76
Moat            Joey            77        47        68        52
Montes          Kerry           77        72        63        65
Smith           Matthew         68        53        60        45
Uyeda           Robin           AB        71        45        35
-------------------------------------------------------------------------------
Type entry or use @ commands                                        @-? for Help
```

6. In order for all test score information to appear on the screen, the column widths for TEST 1, TEST 2, TEST 3, and MIDTERM were decreased using the Open-Apple L (layout) command.

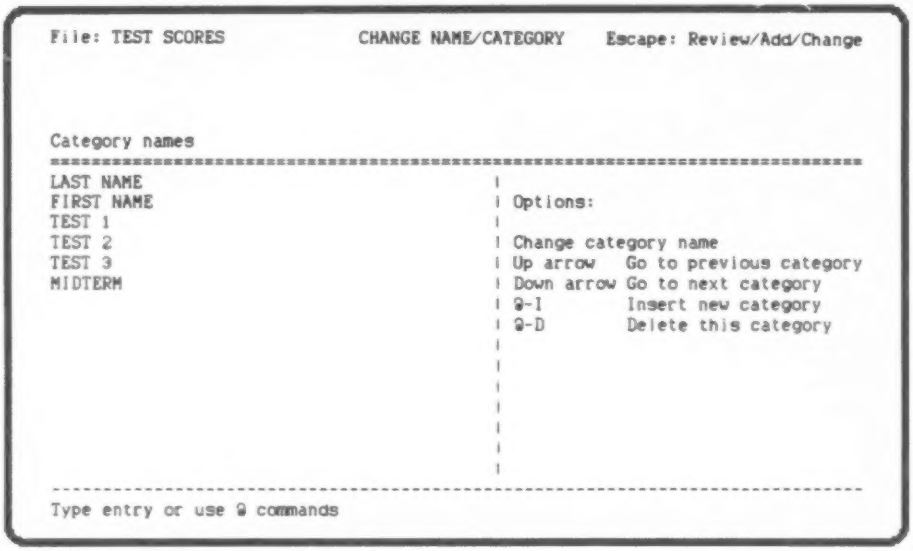
## PART 2: ADDING DATABASE CATEGORIES (Open-Apple N)

An *AppleWorks* database file can contain up to 30 categories (or *fields*). If you find that you need to add, delete, or alter existing categories, you can use the Open-Apple N command (Name or Category Change).

This database now contains categories for three tests and a midterm. We will add one more test category before the midterm and set up several *placeholder* fields for future test scores.

1. From the Review/Add/Change screen, press Open-Apple N (for Name Change).
2. Notice the cursor at the bottom of the screen. At this point you could change the filename to something other than TEST SCORES (e.g.,TEST SCORES T2 for term two grades).
3. To leave the present filename, press Return.
4. We will add a TEST 4 category. It needs to come before the midterm test score.
5. Use the Down Arrow key to position the cursor *on the line* containing the MIDTERM category.

6. Note the options listed on the right-hand side of the screen:



```
File: TEST SCORES            CHANGE NAME/CATEGORY    Escape: Review/Add/Change



Category names
===============================================================================
LAST NAME                                     |
FIRST NAME                                    | Options:
TEST 1                                        |
TEST 2                                        | Change category name
TEST 3                                        | Up arrow   Go to previous category
MIDTERM                                       | Down arrow Go to next category
                                              | @-I        Insert new category
                                              | @-D        Delete this category
                                              |
                                              |
                                              |
                                              |
                                              |
                                              |
-------------------------------------------------------------------------------
Type entry or use @ commands
```

When you are on the Change Name/Category screen you can:

- Change any of the existing category names;
- Use the Up and Down Arrow keys to move around;
- Insert categories anywhere in the list; and
- Delete categories you no longer want.

7. Use the Open-Apple I command to insert a blank line within this category list.

8. You should now receive a screen message reminding you that category changes at this point will cancel any layout adjustment that have been set up through Open-Apple L. Since we need a TEST 4 category, we will proceed. Later we will readjust the column widths.

> **NOTE**: Inserting or deleting database categories will not only return the screen layout to the default settings (e.g., column widths to 15, hidden categories returned to the screen), any report formats that have been set up *will be erased.*
>
> If you want to keep a record of column settings or report formats, start by using Open-Apple H to make a hardcopy of multiple or single layouts and report format screens; then you could reconstruct the layout or format.

9. For "Do you really want to do this?" select: Yes........................ press **RETURN**

10. Now enter TEST 4.

11. Before pressing Return, delete the hyphen that appeared when the blank line was inserted. Open-Apple Y works nicely.

This database will eventually contain more test scores. However, if we decide to insert new categories after we have made any layout changes or have set up any report formats, the new layout or format will be lost. Changing a few column widths takes a few moments, but recreating table or label report formats can be a lot of work.

While on the Change Name/Category screen, we will add four more categories with temporary field names. Later we can rename these categories appropriately.

12. Move the cursor to the line below MIDTERM.

13. Type: *................................................................ press **RETURN**

14. Type a single asterisk on each of the next three lines. Press Return to confirm each entry.

15. Note the upper right-hand corner of the screen. Press Escape to return to the Review/Add/Change screen.

16. For what direction should the cursor go (on the multiple-record layout) when you press Return, select: 1. Down.

## PART 3: CHANGING COLUMN WIDTHS (Open-Apple L)

The 15-character default column widths are back on the screen. We will use Open-Apple L to adjust the column widths in order to view TEST 1 through MIDTERM scores on the screen, without having to scroll.

1. Press Open-Apple L (Layout).

2. Use the Open-Apple and Arrow keys to make the following column adjustments:

   a. Hide the four categories containing temporary field names.
   b. Decrease each TEST category by eight spaces.
   c. Decrease the MIDTERM category by eight spaces.
   d. Decrease the FIRST NAME category by four spaces.

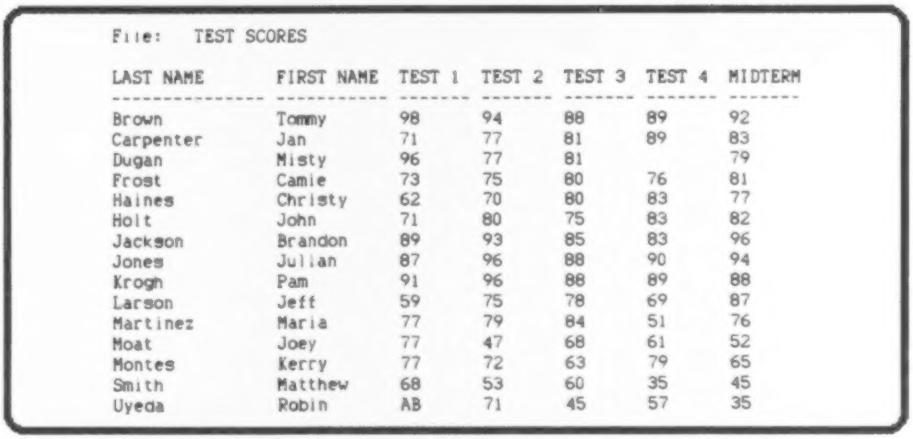
3. Note the word MARGIN next to the MIDTERM column. When this indicator can be seen on the Change Record Layout screen, all columns to the left will be visible on the Review/Add/Change screen.

4. Press the Escape key twice to return to the Review/Add/Change screen.

5. The five test categories should now be displayed on the screen.

## PART 4: ENTERING NEW INFORMATION

1. The database is already arranged alphabetically by last name.
2. Have the multiple-record layout on the screen.
3. Use the example on this page to enter scores for the fourth test.



```
File:   TEST SCORES

LAST NAME       FIRST NAME  TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM
--------------- ----------- ------- ------- ------- ------- -------
Brown           Tommy       98      94      88      89      92
Carpenter       Jan         71      77      81      89      83
Dugan           Misty       96      77      81              79
Frost           Camie       73      75      80      76      81
Haines          Christy     62      70      80      83      77
Holt            John        71      80      75      83      82
Jackson         Brandon     89      93      85      83      96
Jones           Julian      87      96      88      90      94
Krogh           Pam         91      96      88      89      88
Larson          Jeff        59      75      78      69      87
Martinez        Maria       77      79      84      51      76
Moat            Joey        77      47      68      61      52
Montes          Kerry       77      72      63      79      65
Smith           Matthew     68      53      60      35      45
Uyeda           Robin       AB      71      45      57      35
```

4. Pressing Return will move the cursor down to the next row. This is the standard direction the cursor will move unless you indicate *to the right* through the Open-Apple L command.

**NOTE**: "Dittoing an Entry" If you have identical entries to make on several rows (e.g., scores of 83) you do not need to type each one. To quickly copy an entry:

1. Place the cursor on the blank entry which is to contain the same information as the entry on the row above.
2. Hold down the Open-Apple and type the quotes key. (Don't press Shift.)
3. Information from the above entry will be copied into the current entry.

**NOTE:** This quick copy feature of the database is only available on the multiple-record screen.

## PART 5: CREATING A TABLE REPORT FROM THE MULTIPLE RECORD LAYOUT (Open-Apple P)

First we will set up a tables-style report listing the five grades for each student. This will be a simple report, listing only names and scores.

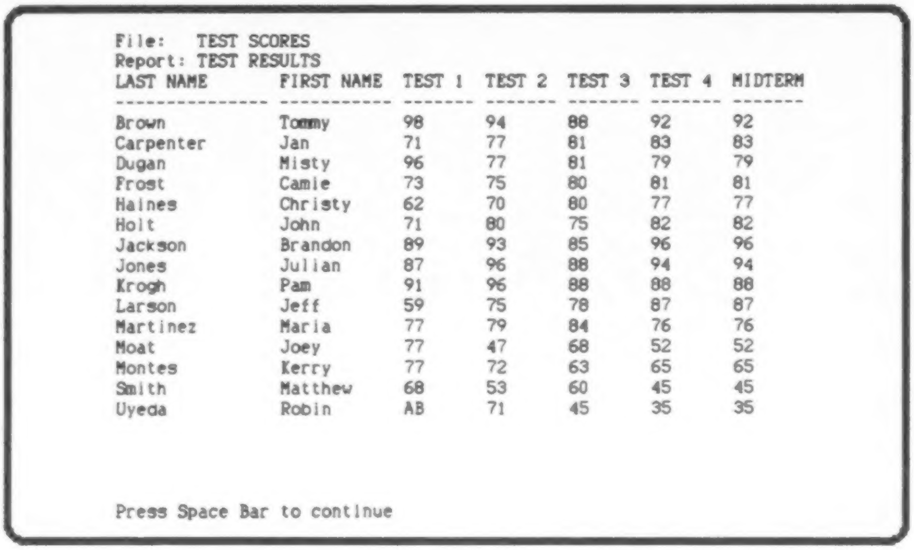
After this report has been printed and saved we will quickly create an identical tables-style report and learn how to include calculated categories in printed reports.

1. From the Review/Add/Change screen, press Open-Apple P to advance to the print mode.
2. Select: 2. Create a new "tables" format .................................... press **RETURN**
3. Select: 2. From the current record layout .................................. press **RETURN**
4. For report name, type: TEST RESULTS ................................. press **RETURN**

Note that the layout changes that were done for easier screen viewing have been transferred over to print layouts. The four placeholder categories are still hidden; the column widths have been adjusted.

> **NOTE**: In earlier *AppleWorks* versions the layout settings that affected how records appeared *on screen* did not affect a printed report. Adjusting column widths, hiding categories, and so on, had to be done within each report format. In other words you had to adjust layouts for both viewing and printing.
>
> With version 3.0 we can now create a new report format "from scratch" (as we did with mailing labels in Activity 2), or base a new report format on the current multiple-record screen. With this second option *AppleWorks* presents only the categories in the current multiple-record layout, and presents them in the order viewed on screen. Thus some otherwise repetitive tasks, such as adjusting column widths and positions, only need to be done once.

5. Note the LEN indicator. Since this report will only require 68 characters per line, we can use the default 10 characters per inch setting.
6. To see what this report will look like: Have the cursor on the LAST NAME category, press Open-Apple P, and print to the screen.
7. Your screen should look like this:



```
File:   TEST SCORES
Report: TEST RESULTS
LAST NAME       FIRST NAME  TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM
--------------- ----------- ------- ------- ------- ------- -------
Brown           Tommy       98      94      88      92      92
Carpenter       Jan         71      77      81      83      83
Dugan           Misty       96      77      81      79      79
Frost           Camie       73      75      80      81      81
Haines          Christy     62      70      80      77      77
Holt            John        71      80      75      82      82
Jackson         Brandon     89      93      85      96      96
Jones           Julian      87      96      88      94      94
Krogh           Pam         91      96      88      88      88
Larson          Jeff        59      75      78      87      87
Martinez        Maria       77      79      84      76      76
Moat            Joey        77      47      68      52      52
Montes          Kerry       77      72      63      65      65
Smith           Matthew     68      53      60      45      45
Uyeda           Robin       AB      71      45      35      35



Press Space Bar to continue
```

8. This report looks fine, so save your work.

9. When finished saving you should be back at the Review/Add/Change screen.

## PART 6: DUPLICATING A REPORT FORMAT (Open-Apple P)

Information in the TEST RESULTS report lists scores per test. You could as easily keep this type of information in a traditional gradebook. The *AppleWorks* database, however, allows you to perform some calculations. We will set up a second tables-style report and examine this feature.

1. From the Review/Add/Change screen, again press Open-Apple P.

2. This time select: 4. Duplicate an Existing Format......................... press **RETURN**

3. Select: 1. TEST RESULTS ................................................... press **RETURN**

4. We will need a new report name, so delete TEST RESULTS with the Open-Apple Y command, enter AVERAGE SCORES, and press Return.

5. Nice—all column width and format adjustments were duplicated.

6. Press Open-Apple I to see whether our temporary fields were also included in this new report.

7. We still don't need them, so press Escape.

## PART 7: SETTING UP A TABLES-STYLE REPORT WITH A CALCULATED CATEGORY (Open-Apple K)

Next we will create a new category. To get an idea of how calculations are stated, we will first write a formula that adds the five test scores and stores the results in a new column.

1. Move the cursor to the right of the MIDTERM column. The new calculated column will push the LEN indicator further to the right.
2. Press Open-Apple K (to "Kalculate").
3. A column of 9999999999's will be inserted, showing where calculation results will appear in the printed report.
4. Note the bottom of the screen. Column H needs a name.
5. Erase "Calculated" and type TOTAL POINTS............................ press **RETURN**
6. Again note the bottom of the screen. You now need to write a calculation rule similar to the one shown in the example.

Formulas for calculating a category entry use the following rules:

- Use the column letter label that appears just below the category name.
- You may use the +, -, *, or / math functions.
- You may also use numbers within a formula (e.g., A*2.5).
- You can use parentheses in a formula to group operations you want done first.
- Calculated categories do not need to be next to the values they use.

**NOTE:**

- If the calculation result is larger than the column width, number signs (####) will appear in the column.
- Arithmetic is done from left to right only.
- Only three calculated categories are allowed on one report.

7. To calculate total points, we need to add the values in columns C, D, E, F, and G. Type: C+D+E+F+G ..................... press **RETURN**
8. Note the bottom of the screen. You need to decide how many decimal places to use.

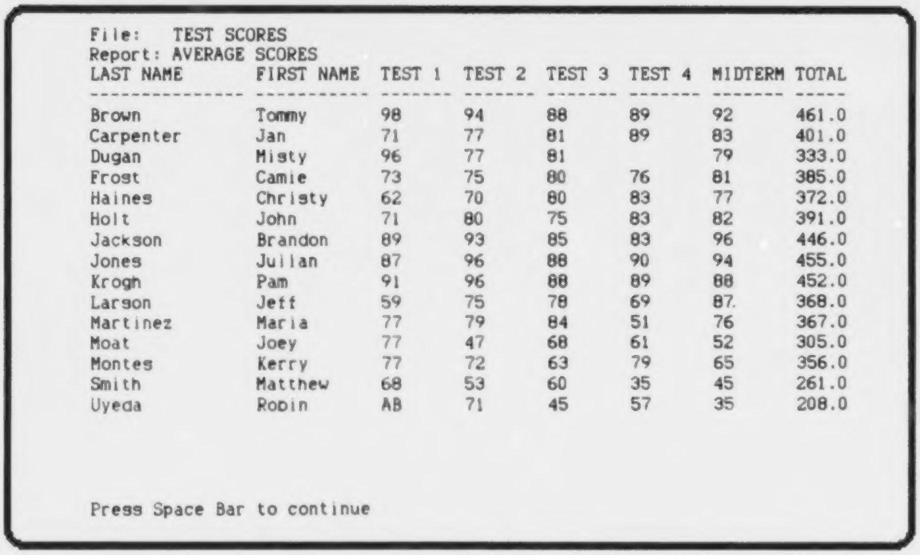
9. Type: 1 .................................................................... press **RETURN**

10. For the final question at the bottom of the screen you need to determine how many blank spaces to leave after the TOTAL column. This is the last column in the report, so one space will be fine.......... press **RETURN**

11. Right now there are a lot of spaces set up for this column. Use the Open-Apple and Left Arrow key to decrease the column width to 999.9.

12. Again check the LEN indicator. We are still comfortably under 80 characters per inch so no printer settings need to be changed.

13. To see the calculation results, print this AVERAGE SCORES report to the screen:



```
File:   TEST SCORES
Report: AVERAGE SCORES
LAST NAME       FIRST NAME  TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM TOTAL
--------------- ----------- ------- ------- ------- ------- ------- -----
Brown           Tommy       98      94      88      89      92      461.0
Carpenter       Jan         71      77      81      89      83      401.0
Dugan           Misty       96      77      81              79      333.0
Frost           Camie       73      75      80      76      81      385.0
Haines          Christy     62      70      80      83      77      372.0
Holt            John        71      80      75      83      82      391.0
Jackson         Brandon     89      93      85      83      96      446.0
Jones           Julian      87      96      88      90      94      455.0
Krogh           Pam         91      96      88      89      88      452.0
Larson          Jeff        59      75      78      69      87.     368.0
Martinez        Maria       77      79      84      51      76      367.0
Moat            Joey        77      47      68      61      52      305.0
Montes          Kerry       77      72      63      79      65      356.0
Smith           Matthew     68      53      60      35      45      261.0
Uyeda           Robin       AB      71      45      57      35      208.0



Press Space Bar to continue
```

14. Check the first few records. Are the calculations correct?

15. When done, press the Space Bar to return to the Report Format screen.

## PART 8: EDITING A CALCULATED CATEGORY (Open-Apple K)

Now that we have gone over the procedure for setting up a calculated category, let's edit the formula and calculate the average test score for all students. We will rewrite the formula to total the five scores and then determine the average.

1. With the cursor on column H, again press Open-Apple K.

2. This time select: Edit Column H ........................................... press **RETURN**

3. Erase TOTAL POINTS and enter AVERAGE ............................. press **RETURN**

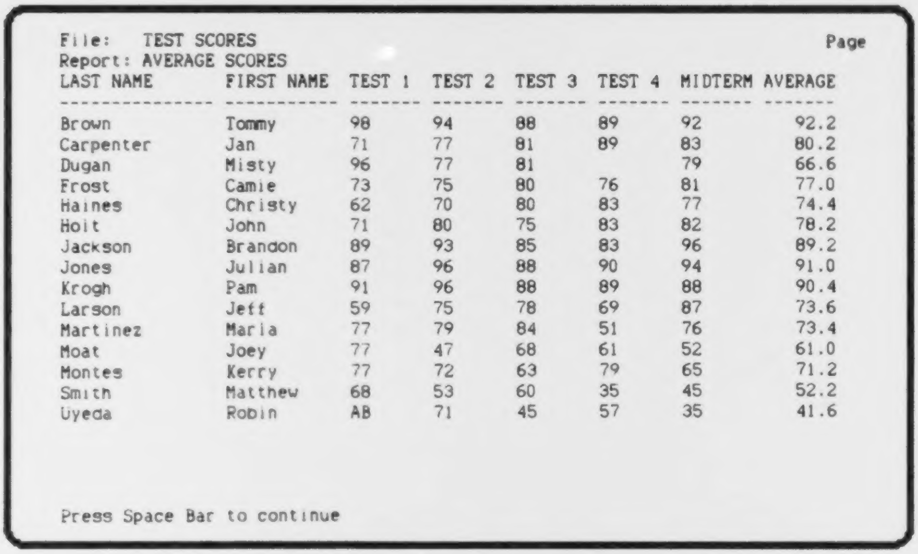
4. Move the cursor to the blank space after the formula.

5. Type: /5 ........................................................................ press **RETURN**

6. Press Returns to leave the same decimal place and blank space settings.

7. Widen the column so all of the category name is readable.

8. Print to the screen to view the calculation results:



```
File:   TEST SCORES                                                    Page
Report: AVERAGE SCORES
LAST NAME       FIRST NAME  TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM AVERAGE
--------------- ----------- ------- ------- ------- ------- ------- -------
Brown           Tommy       98      94      88      89      92         92.2
Carpenter       Jan         71      77      81      89      83         80.2
Dugan           Misty       96      77      81              79         66.6
Frost           Camie       73      75      80      76      81         77.0
Haines          Christy     62      70      80      83      77         74.4
Hoit            John        71      80      75      83      82         78.2
Jackson         Brandon     89      93      85      83      96         89.2
Jones           Julian      87      96      88      90      94         91.0
Krogh           Pam         91      96      88      89      88         90.4
Larson          Jeff        59      75      78      69      87         73.6
Martinez        Maria       77      79      84      51      76         73.4
Moat            Joey        77      47      68      61      52         61.0
Montes          Kerry       77      72      63      79      65         71.2
Smith           Matthew     68      53      60      35      45         52.2
Uyeda           Robin       AB      71      45      57      35         41.6



Press Space Bar to continue
```

9. Now this is useful information!

10. Verify that the first few averages are correct. What about Misty's average? She missed one test? Unlike the spreadsheet, the database has no special functions (e.g., @Average) that can account for individual differences: There is no way to write a special formula for *one* record. The formula for a calculated column applies to *all* records.

11. Also note Robin's average score. The formula ignored the AB (for absent) comment and divided her four tests by five. Again, there is no way to write a formula for just one student.

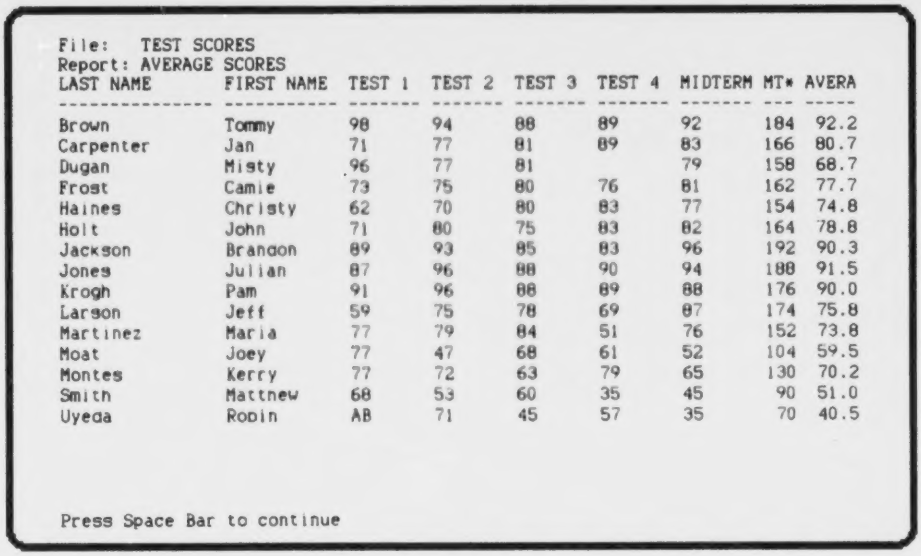
## PART 9: SETTING UP A SECOND CALCULATED CATEGORY (Open-Apple K)

*AppleWorks* allows up to three calculated columns per report format. Next we will set up a calculated column to have the midterm test count as two tests. We can then use the results from this column in the formula we just set up to determine test averages.

1. Return to the Report Format screen.
2. We will insert a second calculated category, one that will be used in the AVERAGE formula. Place the cursor on column H.

> - Calculated categories can only refer back to *earlier calculated* categories *on their left.* (Remember, the program runs all calculations from left to right.)
> - If you do happen to make a calculated category depend on information from another calculated category *on its right*, *AppleWorks* will give you a zero as an indication that it was lacking information when it performed the calculation.
> - However, calculated categories can refer to noncalculated categories *on either side*, because the entries are already there and there's no waiting for a calculation.

3. Press Open-Apple K and select: Create New............................. press **RETURN**
4. For category name, enter: MT*2........................................... press **RETURN**
5. For calculation rule, enter: G*2............................................ press **RETURN**
6. Press Return to accept the next two settings.
7. Check the LEN indicator and decrease column H to 80 characters per line.
8. Print to the screen to view the calcuation results for the new column.
9. Now return to the Report Format screen; we need to edit the formula we wrote to calculate the test averages.
10. With the cursor on column I, edit the formula to read: C+D+E+F+H/6. (We are now going to use the values in column H, not column G, for the midterm scores.)
11. Press Return to accept the next two settings.
12. Print to the screen to examine these test averages:



```
File:    TEST SCORES
Report: AVERAGE SCORES
LAST NAME        FIRST NAME   TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM MT* AVERA
---------------- ------------ ------- ------- ------- ------- ------- --- -----
Brown            Tommy        98      94      88      89      92      184  92.2
Carpenter        Jan          71      77      81      89      83      166  80.7
Dugan            Misty        96      77      81              79      158  68.7
Frost            Camie        73      75      80      76      81      162  77.7
Haines           Christy      62      70      80      83      77      154  74.8
Holt             John         71      80      75      83      82      164  78.8
Jackson          Brandon      89      93      85      83      96      192  90.3
Jones            Julian       87      96      88      90      94      188  91.5
Krogh            Pam          91      96      88      89      88      176  90.0
Larson           Jeff         59      75      78      69      87      174  75.8
Martinez         Maria        77      79      84      51      76      152  73.8
Moat             Joey         77      47      68      61      52      104  59.5
Montes           Kerry        77      72      63      79      65      130  70.2
Smith            Matthew      68      53      60      35      45       90  51.0
Uyeda            Robin        AB      71      45      57      35       70  40.5



Press Space Bar to continue
```

13. Save your work so these calculations will always be available within the AVERAGE SCORES report.

We will leave this database for now. However, we will return to these report formats when we learn to print database reports to a word processor file. And in Chapter 6 you will also learn how to use the mail merge option for transferring database information into word processed progress reports.

# ACTIVITY 6
# COPYING RECORDS BETWEEN DATABASE FILES AND INTO A WORD PROCESSOR DOCUMENT

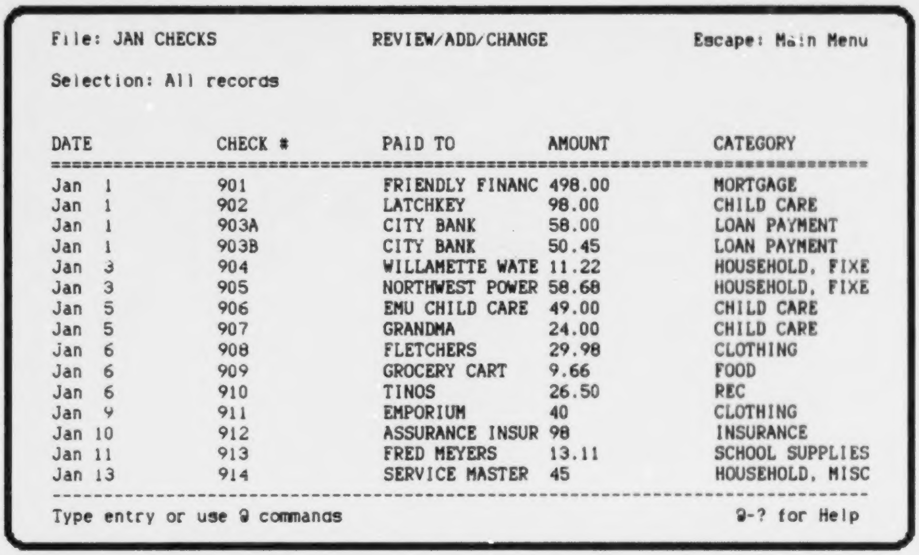
In this activity we will again work with databases containing checkbook records. We will review the process for transferring records from one database file to another. As long as the category names were originally set up in the same order, combining database records is very simple.

We will also examine the process for transferring database records into a word processed document by transferring several check records to a word processed letter to the bank.

With *AppleWorks* this database-to-wordprocessor transfer is now very straightforward requiring only that we 1) copy information *to* the Clipboard, 2) switch to a word processor file, and 3) copy the information *from* the Clipboard. As information for all categories does not need to be transferred we will write a record selection rule to determine which records are to be sent, and hide from the multiple-record screen any categories that are not to be included.

## PART 1: ADDING DATABASE FILES TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop. ........................................ press **RETURN**
3. Select: 1. Get file from Current Disk. ...................................... press **RETURN**
4. Select: --> JAN CHECKS and
   --> FEB CHECKS ............................................................ press **RETURN**
5. From the Desktop Index, select: --> JAN CHECKS..................... press **RETURN**
6. A database containing 26 checks for the month of January should now be on the screen:



```
File: JAN CHECKS               REVIEW/ADD/CHANGE              Escape: Main Menu

Selection: All records

DATE            CHECK #         PAID TO         AMOUNT          CATEGORY
===============================================================================
Jan  1          901             FRIENDLY FINANC 498.00          MORTGAGE
Jan  1          902             LATCHKEY        98.00           CHILD CARE
Jan  1          903A            CITY BANK       58.00           LOAN PAYMENT
Jan  1          903B            CITY BANK       50.45           LOAN PAYMENT
Jan  3          904             WILLAMETTE WATE 11.22           HOUSEHOLD, FIXE
Jan  3          905             NORTHWEST POWER 58.68           HOUSEHOLD, FIXE
Jan  5          906             EMU CHILD CARE  49.00           CHILD CARE
Jan  5          907             GRANDMA         24.00           CHILD CARE
Jan  6          908             FLETCHERS       29.98           CLOTHING
Jan  6          909             GROCERY CART    9.66            FOOD
Jan  6          910             TINOS           26.50           REC
Jan  9          911             EMPORIUM        40              CLOTHING
Jan 10          912             ASSURANCE INSUR 98              INSURANCE
Jan 11          913             FRED MEYERS     13.11           SCHOOL SUPPLIES
Jan 13          914             SERVICE MASTER  45              HOUSEHOLD, MISC
-------------------------------------------------------------------------------
Type entry or use @ commands                                      @-? for Help
```

7. Note that no screen layout adjustments have been made in this file.

8. Zoom to the single-record screen and note that this file does not contain a DEPOSIT category.

## PART 2: COMBINING DATABASE FILES (Open-Apple C, to the Clipboard)

We will not set up any report formats. In this activity we will transfer a copy of these January checks to the file containing records for February. Then the file name will be changed to identify the database as one that contains records for the year.

1. Place the cursor on the first record on the multiple-record screen.

2. Press Open-Apple C (to Copy).

3. Select: To Clipboard........................................................ press **RETURN**

4. We want to copy every record, so use the Down Arrow key or Open-Apple 9 to highlight all records.

5. Press Return.
   A copy of the entire database file is now on the Clipboard.

6. Press Open-Apple Q (for a Quick switch).

7. Highlight: FEB CHECKS................................................. press **RETURN**

8. Move the cursor to the first record with an Arrow key or Open-Apple 1.

9. Press Open-Apple M (to Move).
10. Select: From Clipboard........................................................ press **RETURN**

This database file should now contain check records for both January and February.

When we *move* information from the clipboard, we actually remove it from memory. If we now tried to move information from the clipboard twice we would receive a message indicating that the clipboard was empty.

However, we can *copy* information from the clipboard over and over, and the information would remain on the clipboard until we:

- *Copied* or *moved* new information to the clipboard,
- *Moved* information from the clipboard; or
- *Quit AppleWorks.*

11. Right now the records are arranged chronologically. Change this so all records are arranged alphabetically by *category*.
12. Your screen should now list the two February deposits, followed by records for AUTO EXPENSES, CHILD CARE, CLOTHING, etc.

## PART 3: CHANGING THE NAME OF A FILE (Open-Apple N)

A quick way to create another database file is to change the name of an existing file, then resave. Since the name we originally gave to this file, FEB CHECKS, is no longer descriptive (and we could use another database for storing check records for more than one month), we will change the file name and have an additional file.

1. Press Open-Apple N (for Name or Category Change).
2. Use Open-Apple Y to erase FEB CHECKS.
3. Enter: CHECKS 90........................................................ press **RETURN**
4. Press the Escape key to return to the Review/Add/Change screen.
5. Confirm that the CHECKS 90 file name is now in the upper left-hand corner of the screen.
6. Save this file.

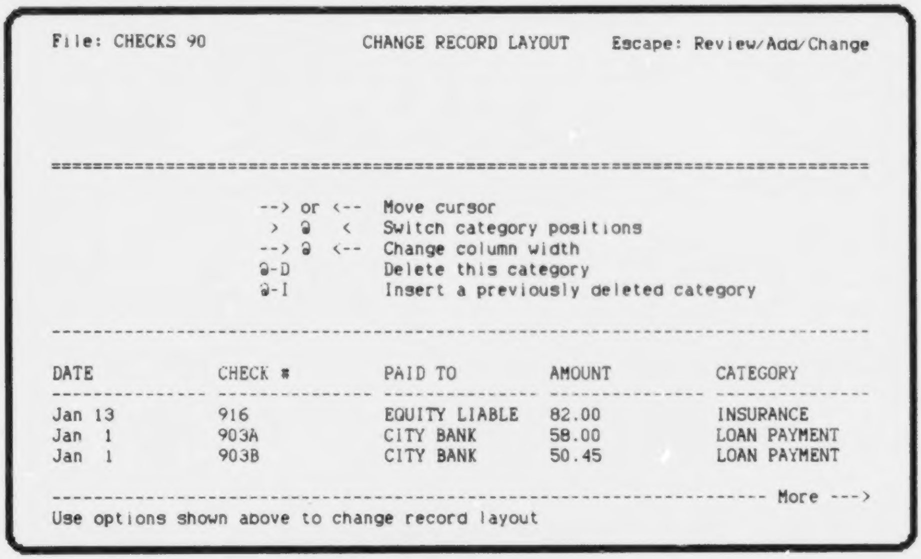
## PART 4: SELECTING RECORDS AND HIDING DATABASE CATEGORIES (Open-Apple R, Open-Apple L)

We only want to work with records involving City Bank.

1. Press Open-Apple R.
2. Enter a record selection rule so only checks paid to CITY BANK appear on screen.

We can only transfer *complete* records (all the categories) when copying or moving between two database files. However, when we prepare a database for use in a word processor document, we can leave out some of the categories. Any categories not needed in the letter we are going to write to the bank will be hidden.

3. Press Open-Apple L to get the Change Record Layout screen.
4. Move the cursor to the MEMO column.
5. Press Open-Apple D.
6. Delete the placeholder ( : ) category.
7. The cursor will now be on the (TAX DED ?) column. Press Open-Apple D to hide this category. Also hide (CLEARED ?) and (DEPOSIT).
8. Information contained in the following five categories will be copied to a word processor file:



```
File: CHECKS 90              CHANGE RECORD LAYOUT    Escape: Review/Add/Change




==========================================================================

                        --> or <--   Move cursor
                         >    <    Switch category positions
                        -->  <--   Change column width
                        -D          Delete this category
                        -I          Insert a previously deleted category

--------------------------------------------------------------------------

DATE            CHECK #         PAID TO         AMOUNT          CATEGORY
--------------- --------------- --------------- --------------- ---------------
Jan 13          916             EQUITY LIABLE   82.00           INSURANCE
Jan  1          903A            CITY BANK       58.00           LOAN PAYMENT
Jan  1          903B            CITY BANK       50.45           LOAN PAYMENT

--------------------------------------------------------------- More --->
Use options shown above to change record layout
```

9. Escape to the Review/Add/Change screen.

## PART 5: COPYING RECORDS TO THE CLIPBOARD FOR THE WORD PROCESSOR (Open-Apple P, to the Clipboard)

1. When back on the Review/Add/Change screen, press Open-Apple C.
2. Select: To Clipboard........................................................ press **RETURN**
3. We want to copy every record, so use the Down Arrow key or Open-Apple 9 to highlight all records.
4. Press Return.
   A copy of the four database records is now on the Clipboard.

## PART 6: CREATING A WORD PROCESSOR FILE

When we put something on the Clipboard by copying or moving, it stays there undisturbed as long as we don't copy or move something else to the Clipboard. And, we can continue working on different files on the Desktop. Now it is time to write a letter to the bank.

1. Escape to the Main Menu.
2. Add a new word processor file to the Desktop.
3. For file name,type: Loan Letter............................................. press **RETURN**
4. Press Open-Apple O (Printer Options).
5. Set both top and bottom margins for one inch.
6 Leave the characters per inch setting at 10 and retain the single spacing.
7. Escape to the Review/Add/Change screen.

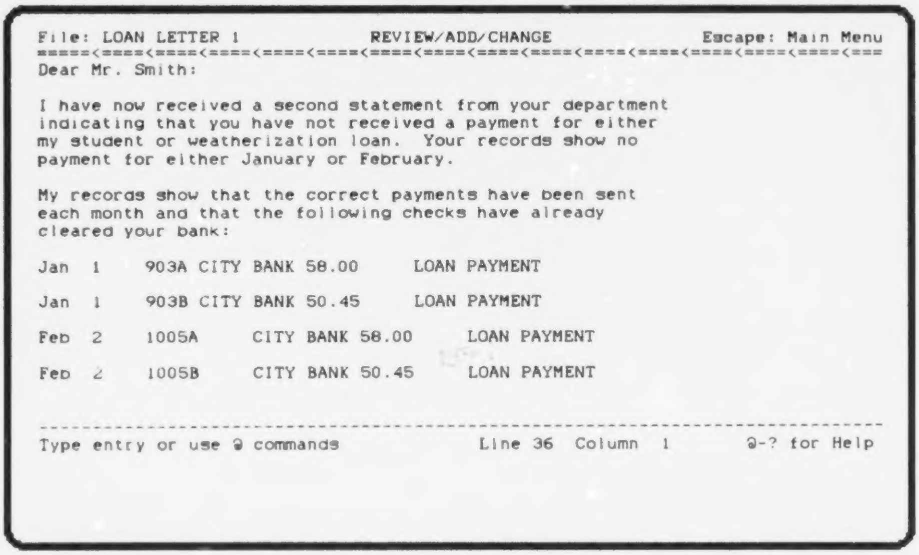
## PART 7: COPYING INFORMATION FROM THE CLIPBOARD (Open-Apple C)

Now you will write a letter to City Bank informing them that you have already sent both your student and weatherization loan payments to them for January and February. This letter will include the date and check numbers for these checks.

Information for the first part of the letter has been included on page 74. You will copy the database information from the clipboard into this file. You may then write your own conclusion to the letter.

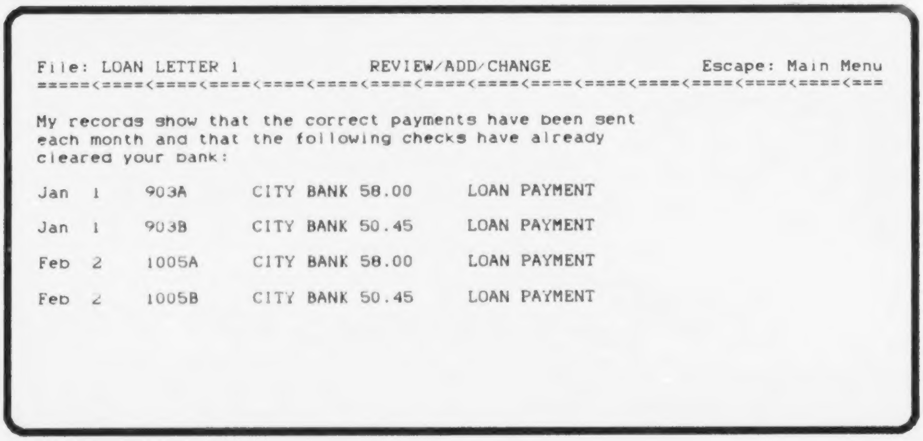
1. Enter the first part of the letter, customizing it to include your name, address, etc.
2. Press Return twice after the second paragraph.

3. To copy information from the Clipboard, press Open-Apple C.
4. Select: From the Clipboard ............................................. press **RETURN**
5. The City Bank records should now be in your letter:



```
File: LOAN LETTER 1            REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Dear Mr. Smith:

I have now received a second statement from your department
indicating that you have not received a payment for either
my student or weatherization loan.  Your records show no
payment for either January or February.

My records show that the correct payments have been sent
each month and that the following checks have already
cleared your bank:

Jan  1     903A CITY BANK 58.00     LOAN PAYMENT

Jan  1     903B CITY BANK 50.45     LOAN PAYMENT

Feb  2     1005A     CITY BANK 58.00     LOAN PAYMENT

Feb  2     1005B     CITY BANK 50.45     LOAN PAYMENT


-------------------------------------------------------------------------------
Type entry or use @ commands           Line 36  Column  1         @-? for Help
```

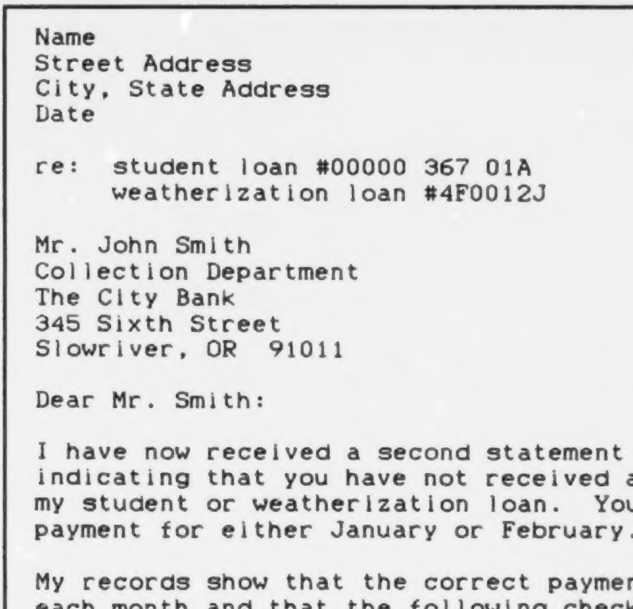
6. Note that the database columns are now conforming to the word processor tabs: the first two City Bank records lining up with the nearest Tab stop; the next two records adjusting to other TAB settings according to the length of text.
7. Place the cursor on the first City Bank entry and press the Tab key to line up the columns.
8. Repeat for the second City Bank entry so your screen looks like this:



```
File: LOAN LETTER 1            REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===

My records show that the correct payments have been sent
each month and that the following checks have already
cleared your bank:

Jan  1     903A      CITY BANK 58.00     LOAN PAYMENT

Jan  1     903B      CITY BANK 50.45     LOAN PAYMENT

Feb  2     1005A     CITY BANK 58.00     LOAN PAYMENT

Feb  2     1005B     CITY BANK 50.45     LOAN PAYMENT
```

9. Move the cursor below the check records and write a c

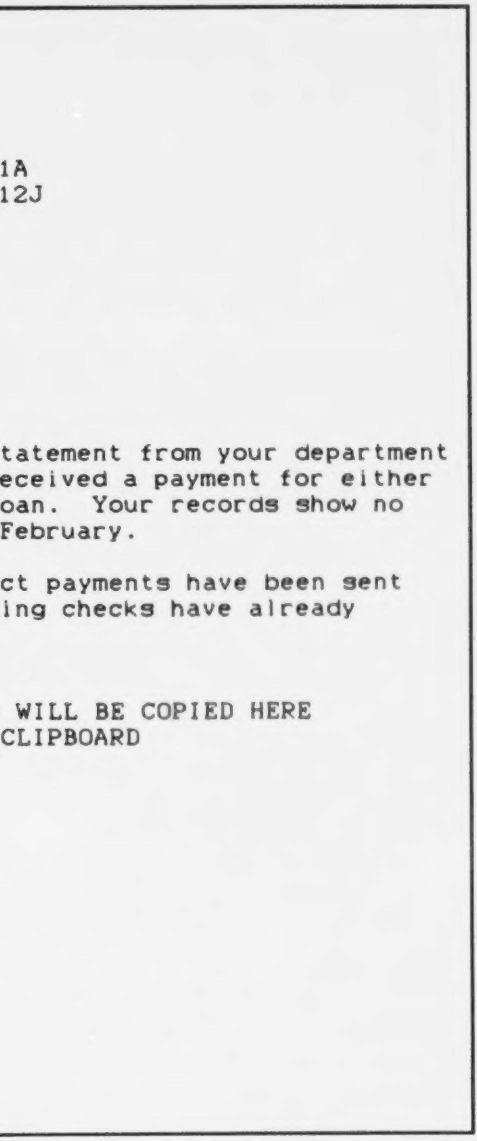
10. Save the LOAN LETTER file. If you later need to sen
document is already set up and ready to receive more C



```
Name
Street Address
City, State Address
Date

re:  student loan #00000 367 01A
     weatherization loan #4F0012J

Mr. John Smith
Collection Department
The City Bank
345 Sixth Street
Slowriver, OR  91011

Dear Mr. Smith:

I have now received a second statement
indicating that you have not received a
my student or weatherization loan.  You
payment for either January or February.

My records show that the correct paymen
each month and that the following check
cleared your bank:


          DATABASE INFORMATION WILL BE
                     FROM THE CLIPBOARD


(Your conclusion . . . )


Sincerely,




Your name
```

nd write a concluding paragraph.

need to send another letter to the bank, a
eive more Clipboard transfers.



```
1A
12J




tatement from your department
eceived a payment for either
oan.  Your records show no
February.

ct payments have been sent
ing checks have already


 WILL BE COPIED HERE
CLIPBOARD
```

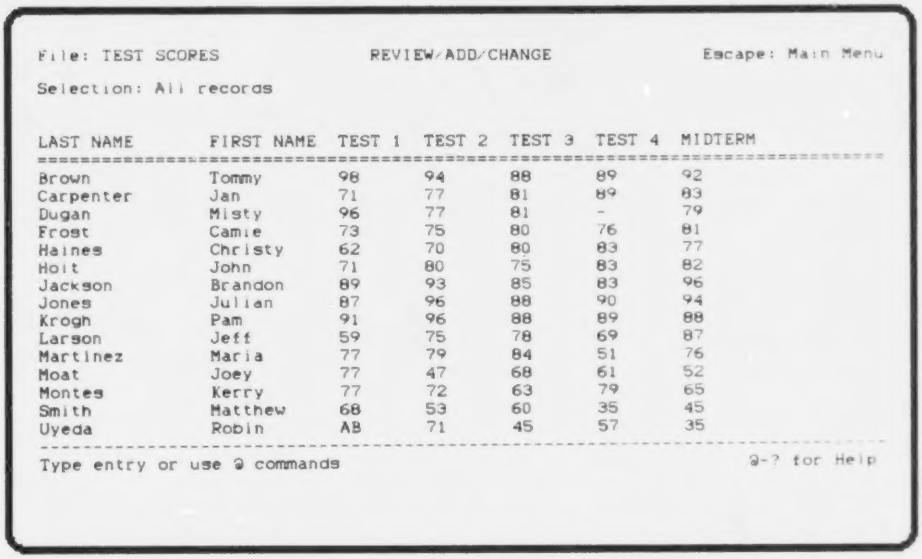
# ACTIVITY 7
# TRANSFERRING DATABASE RECORDS INTO A WORD PROCESSOR DOCUMENT

In the last activity we learned that while only complete records could be transferred between database files, *categories* could be left out when copying database records for use in a word processed document.

We also learned that specific *records* could be sent to the clipboard by creating a record selection rule. In this activity we continue to examine a second way *AppleWorks* 3.0 allows us to transfer database records to a word processed document.

## PART 1: ADDING A DATABASE FILE TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop.
3. Select: 1. Get File from Current Disk.
4. Select: TEST SCORES.
5. The database you worked with in Activity 5 should now be on the screen:



```
File: TEST SCORES              REVIEW/ADD/CHANGE             Escape: Main Menu

Selection: All records

LAST NAME       FIRST NAME  TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM
=========================================================================
Brown           Tommy       98      94      88      89      92
Carpenter       Jan         71      77      81      89      83
Dugan           Misty       96      77      81      -       79
Frost           Camie       73      75      80      76      81
Haines          Christy     62      70      80      83      77
Holt            John        71      80      75      83      82
Jackson         Brandon     89      93      85      83      96
Jones           Julian      87      96      88      90      94
Krogh           Pam         91      96      88      89      88
Larson          Jeff        59      75      78      69      87
Martinez        Maria       77      79      84      51      76
Moat            Joey        77      47      68      61      52
Montes          Kerry       77      72      63      79      65
Smith           Matthew     68      53      60      35      45
Uyeda           Robin       AB      71      45      57      35
-------------------------------------------------------------------------
Type entry or use @ commands                                 @-? for Help
```

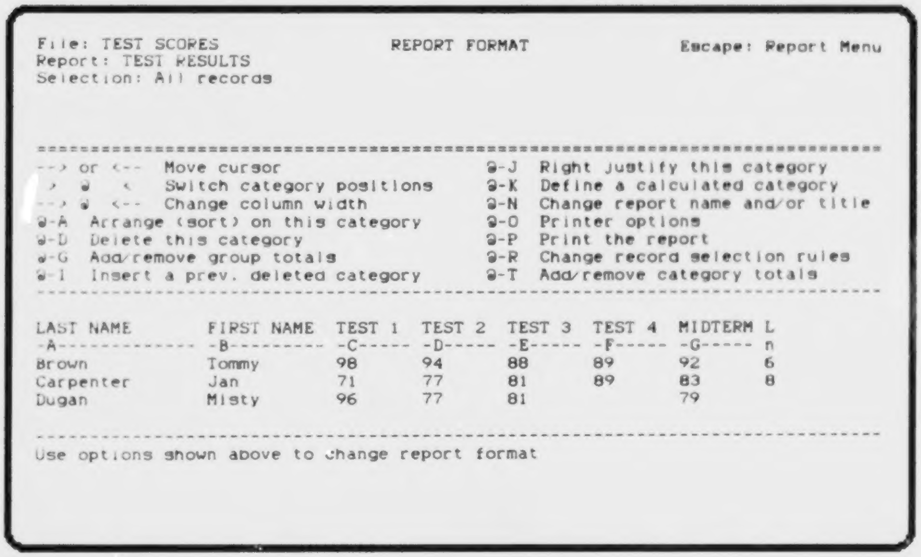
## PART 2: SETTING UP A TABLE REPORT (Open-Apple P)

We can also transfer database information to a word processor file by setting up a report format as if we were about to print it. Within this report format we can still write appropriate record selection rules, and hide any unwanted categories.

Printing to the Clipboard (rather than copying or moving to the Clipboard) preserves the formatting. When transferred to a word processor document, category columns will line up exactly as displayed on the database Report Format screen, rather than conforming to the tab settings in force in the document.

We will use the report format we set up in Activity 5 and see how students' test scores and averages can be included in a word processed letter.

1. From the Review/Add/Change screen, press Open-Apple P (Print).
2. Select: 1. Get a Report Format ............................................. press **RETURN**
3. Select: 2. TEST RESULTS................................................. press **RETURN**
4. Note that column widths within this report format have been preserved since the last time this file opened; the Len indicator shows that each record will require 68 characters per line:



```
File: TEST SCORES                REPORT FORMAT              Escape: Report Menu
Report: TEST RESULTS
Selection: All records



================================================================================
--> or <--   Move cursor                          @-J  Right justify this category
 >  @   <    Switch category positions            @-K  Define a calculated category
--> @  <--   Change column width                  @-N  Change report name and/or title
@-A  Arrange (sort) on this category              @-O  Printer options
@-D  Delete this category                         @-P  Print the report
@-G  Add/remove group totals                      @-R  Change record selection rules
@-I  Insert a prev. deleted category              @-T  Add/remove category totals
--------------------------------------------------------------------------------

LAST NAME       FIRST NAME  TEST 1  TEST 2  TEST 3  TEST 4  MIDTERM L
-A------------- -B--------- -C----- -D----- -E----- -F----- -G----- n
Brown           Tommy       98      94      88      89      92      6
Carpenter       Jan         71      77      81      89      83      8
Dugan           Misty       96      77      81              79

--------------------------------------------------------------------------------
Use options shown above to change report format
```

Records are currently arranged alphabetically by last name. As a review we will sort these records by midterm scores, select students who received a midterm exam score lower than 60 points, view the report on the screen, print the report to the Clipboard, and transfer to a word processor document.

5. With the cursor on column G (MIDTERM), arrange this report from 0 to 9.

6. Print this report to the screen, and note how many students in the list received scores less than 60 points.
7. When back on the Report Format screen, write a rule so only students who received fewer than 60 points on their midterm exam are selected.

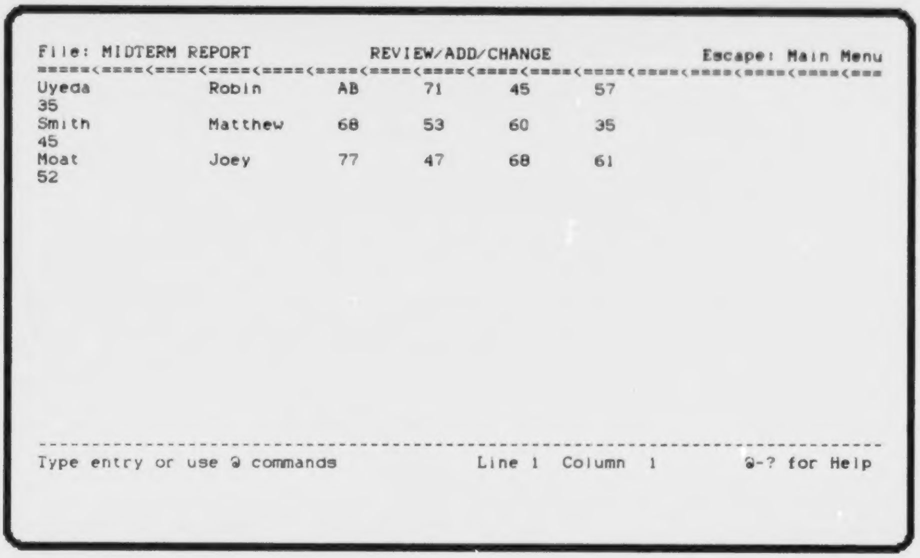
Printing to the Clipboard also preserves any header information. For this report, that information is not needed.

8. From the Printer Options screen, switch the PH (Print Report Header) option to No.
9. Print to the screen and note which student records will be sent to the Clipboard.
10. When back on the Report Format screen, select: 3. The Clipboard (for the Word Processor)...................... press **RETURN**
11. Next you will get a message that the report is now on the Clipboard.
12. Press the Space Bar to continue.

## PART 3: COPYING AND ADJUSTING INFORMATION FROM THE CLIPBOARD (Open-Apple C, Open-Apple O)

1. To transfer this report to a word processor document, Escape back to the Main Menu and create a new word processor file from scratch.
2. For file name, enter: MIDTERM REPORT.
3. Press Open-Apple C and copy text from the Clipboard.

Having printed to the Clipboard rather than copying, all columns line up; however the midterm score for each record is wrapping to a second line.



```
File: MIDTERM REPORT          REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
Uyeda               Robin        AB       71       45       57
35
Smith               Matthew      68       53       60       35
45
Moat                Joey         77       47       68       61
52









-------------------------------------------------------------------------------
Type entry or use @ commands              Line 1  Column  1        @-? for Help
```

**NOTE**: If a word processor document is set for default printer settings (CI = 10, LM = 1 inch, and RM = 1 inch), you will have room for *60* characters per line:

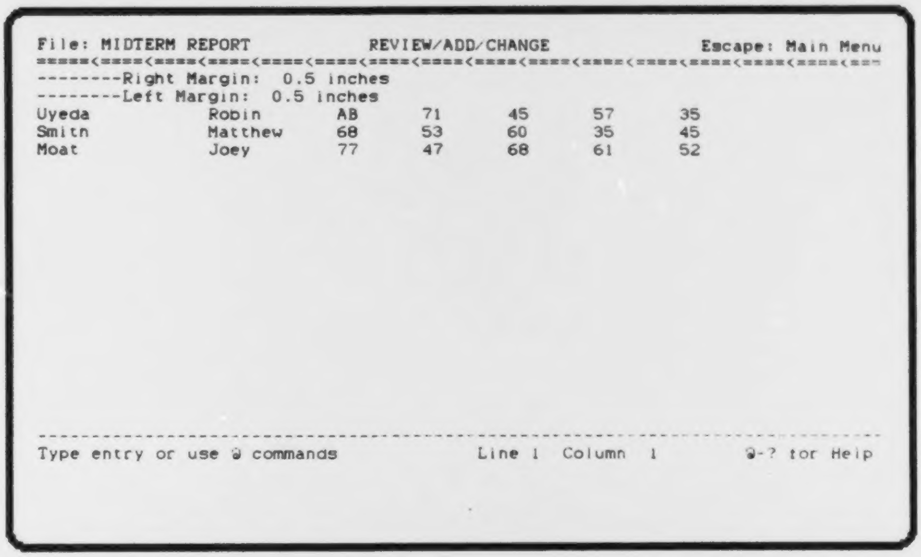
| | | |
|---|---|---|
| 10 Characters per inch | = | 80 characters per line |
| minus | | 10 characters for left margin |
| minus | | 10 characters for right margin |

To make room for database (or spreadsheet) information, you can increase the CI setting, or reduce the left or right margin setting.

For "lengthy" database (or spreadsheet) records this adjustment will be necessary regardless of method used (copying, moving, or printing) to transfer information to a word processor document.

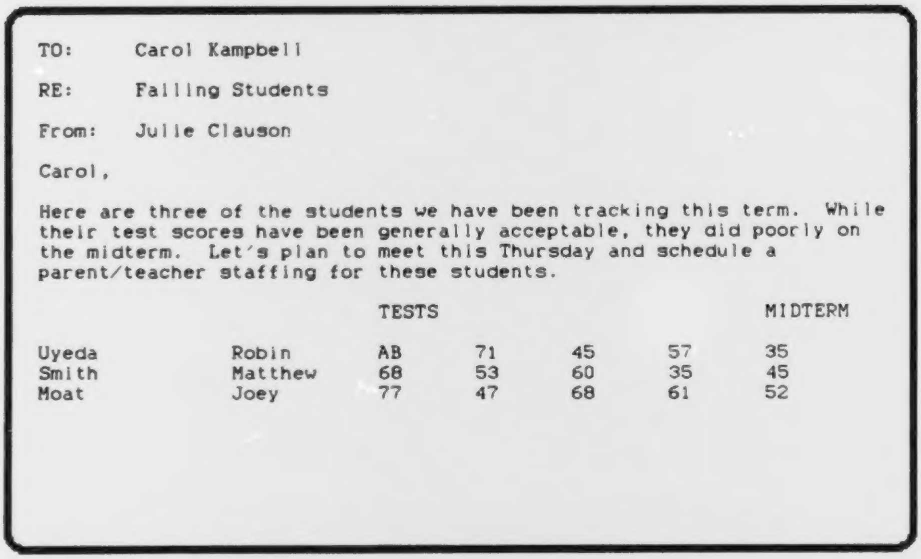
4. With the cursor at the top of the file, press Open-Apple O and change both right and left margins to .5 inch.

5. Note how the 68-character database information now fits on one word processor line:



```
File: MIDTERM REPORT          REVIEW/ADD/CHANGE              Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<==
--------Right Margin:  0.5 inches
--------Left Margin:  0.5 inches
Uyeda           Robin      AB      71      45      57      35
Smitn           Matthew    68      53      60      35      45
Moat            Joey       77      47      68      61      52









-------------------------------------------------------------------------------
Type entry or use @ commands           Line 1  Column  1          @-? for Help
```

6. Press Return several times and enter the following word processed memo:



```
TO:     Carol Kampbell

RE:     Failing Students

From:   Julie Clauson

Carol,

Here are three of the students we have been tracking this term.  While
their test scores have been generally acceptable, they did poorly on
the midterm.  Let's plan to meet this Thursday and schedule a
parent/teacher staffing for these students.

                             TESTS                             MIDTERM

Uyeda           Robin        AB      71      45      57        35
Smith           Matthew      68      53      60      35        45
Moat            Joey         77      47      68      61        52
```

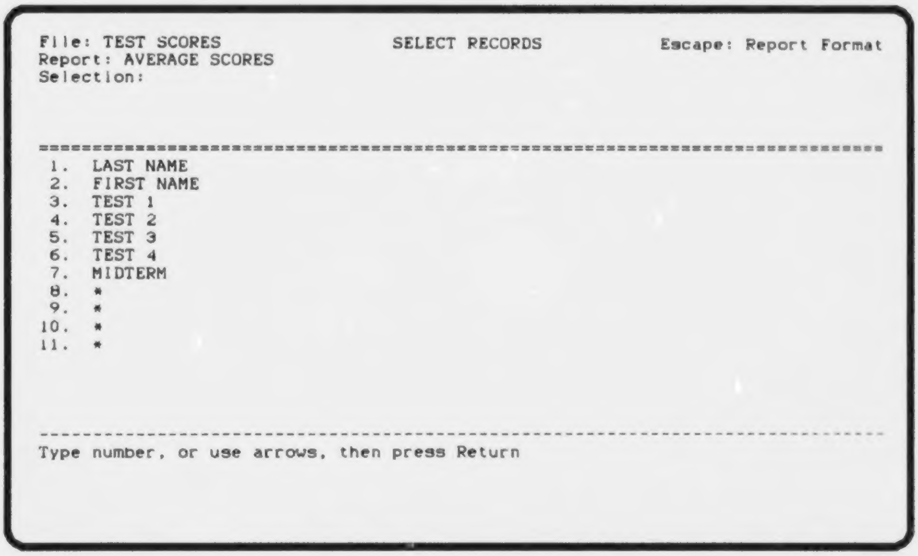
7. Save this file.

# PART 4: SELECTING RECORDS WITH CALCULATED CATEGORIES

What if we wanted to include in a word processed letter only students with "average" scores less than 60 points? We know we can write record selection rules with *noncalculated categories* both from the multiple-record screen and a report format. What about using *calculated categories*?

1. Press Open-Apple Q to Quickly switch to the TEST SCORES database.
2. Press Open-Apple P, and get the AVERAGE SCORES report from the Report Catalog screen.
3. To select students with low averages, press Open-Apple R.
4. The Select Records screen displays 11 categories.

It appears that neither of the calculated columns (MT*2 or AVERAGE) is available for use in a record selection rule:



```
File: TEST SCORES                 SELECT RECORDS           Escape: Report Format
Report: AVERAGE SCORES
Selection:



================================================================================
 1.  LAST NAME
 2.  FIRST NAME
 3.  TEST 1
 4.  TEST 2
 5.  TEST 3
 6.  TEST 4
 7.  MIDTERM
 8.  *
 9.  *
10.  *
11.  *




--------------------------------------------------------------------------------
Type number, or use arrows, then press Return
```

5. Escape back to the Report Format screen.

What about arranging records by a calculated category? Warning—Don't even try!! The program has a history of locking up, resulting in a loss of data.

**NOTE**: As mentioned earlier, a calculated category can be a useful addition to a printed report. However even with a later version there are still restrictions with this feature: only three calculated categories are available per report, and information in calculated columns cannot be arranged or selected.

From this example it is now apparent that we cannot have *AppleWorks* select specific students based on a calculated category (e.g., students with either the highest or lowest average scores) and print only their records to either the printer or clipboard.

We have not changed any of the database entries or altered the report formats, so we do not have to save. We will return to this database in the Mail Merge chapter. There we will see a method for inserting entries in both *calculated* and *noncalculated* categories into a form letter.

# ACTIVITY 8
# TRANSFERRING DATABASE INFORMATION INTO A SPREADSHEET FILE

In the last two activities we learned that transferring information between database files meant copying or moving complete records. And when we prepared database records to be copied, moved, or printed to the Clipboard for use in a word processor file, we found we could leave out some categories.

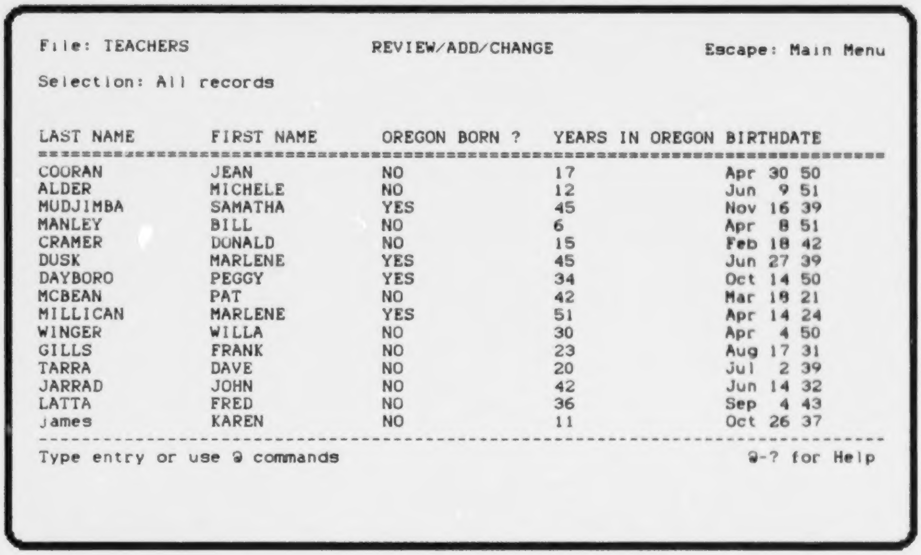
In this activity we will examine the process for transferring database information into the spreadsheet. With *AppleWorks* version 3.0 the process is very straightforward and fast. Again categories can be excluded, switched around, sorted, and used when defining record selection rules. Again the process for transferring database information requires copying (or moving) to and from the Clipboard—a major improvement over earlier versions.

To summarize, transferring database information to a spreadsheet involves:

- Determining which information to include in the new spreadsheet;
- Copying the desired database records and categories to the Clipboard;
- Switching to a spreadsheet file;
- Copying records from the Clipboard.

## PART 1: ADDING A DATABASE FILE TO THE DESKTOP

1. Begin at the Main Menu.
2. Select: 1. Add Files to the Desktop.
3. Select: 1. Get File from Current Disk.
4. Select: TEACHERS
5. The database you began with in Activity 1 should now be on the screen:

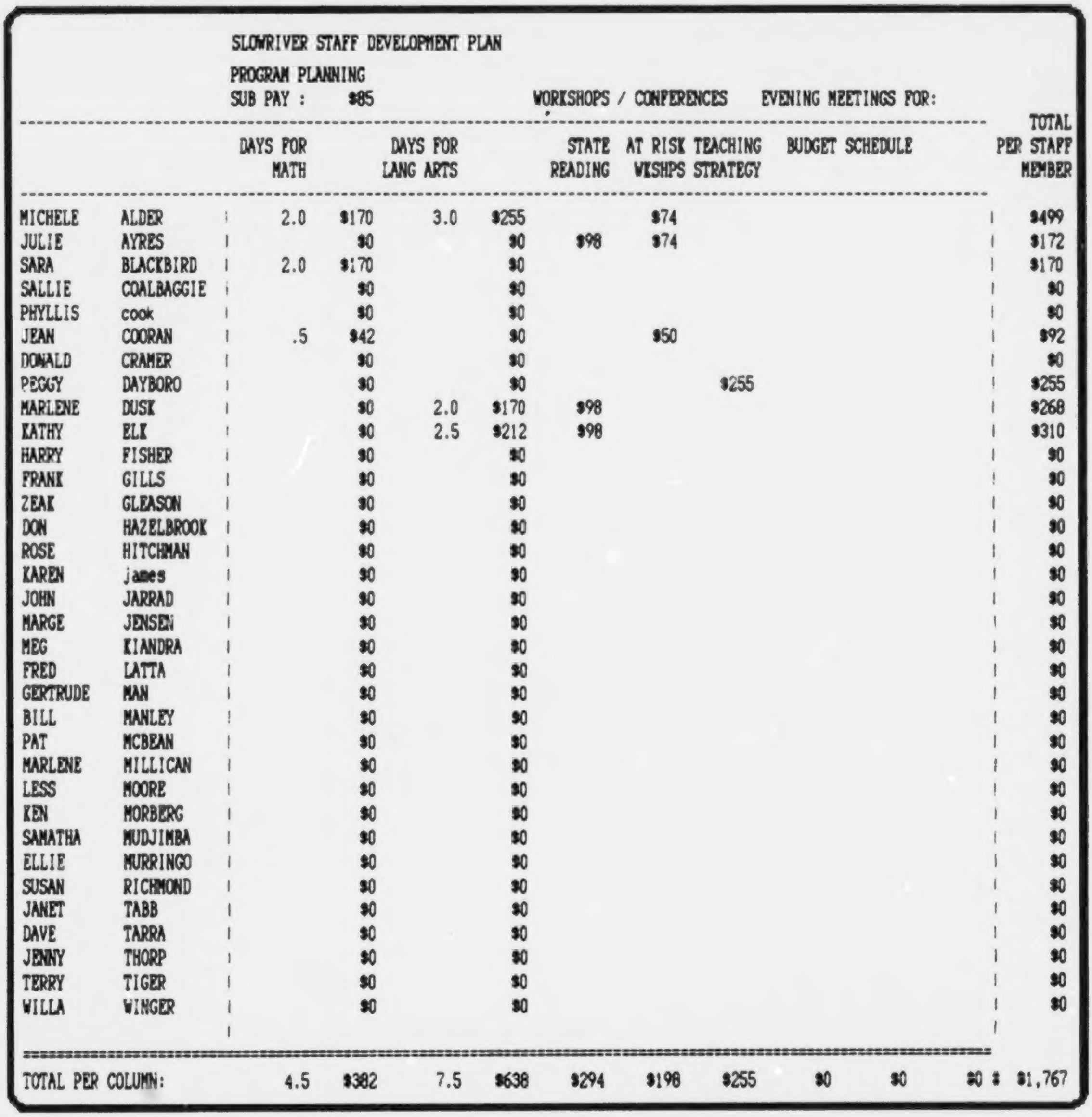


```
File: TEACHERS                 REVIEW/ADD/CHANGE                Escape: Main Menu

Selection: All records

LAST NAME       FIRST NAME      OREGON BORN ?   YEARS IN OREGON BIRTHDATE
=============================================================================
COORAN          JEAN            NO              17                    Apr 30 50
ALDER           MICHELE         NO              12                    Jun  9 51
MUDJIMBA        SAMATHA         YES             45                    Nov 16 39
MANLEY          BILL            NO              6                     Apr  8 51
CRAMER          DONALD          NO              15                    Feb 18 42
DUSK            MARLENE         YES             45                    Jun 27 39
DAYBORO         PEGGY           YES             34                    Oct 14 50
MCBEAN          PAT             NO              42                    Mar 18 21
MILLICAN        MARLENE         YES             51                    Apr 14 24
WINGER          WILLA           NO              30                    Apr  4 50
GILLS           FRANK           NO              23                    Aug 17 31
TARRA           DAVE            NO              20                    Jul  2 39
JARRAD          JOHN            NO              42                    Jun 14 32
LATTA           FRED            NO              36                    Sep  4 43
james           KAREN           NO              11                    Oct 26 37
-----------------------------------------------------------------------------
Type entry or use @ commands                                      @-? for Help
```

## PART 2: DETERMINING WHICH CATEGORIES TO INCLUDE (Open-Apple L)

For this activity we will compile the "staff development" requests for Slowriver School. Teachers have indicated workshops or conferences they would like to attend as well as release time requests for team/program planning. The cost per request category varies, ranging from actual workshop or inservice fees to substitute teacher rates or meal expenses for evening planning sessions.

We already have the teachers' names in a database, but in order to determine the total cost for individual staff members and each type of request we need more calculating power than the database can provide. With a spreadsheet we can tinker with the numbers to examine financial implications. Through this activity we will learn the process for transferring database information to a spreadsheet and review many of the features covered in the spreadsheet chapter. Our final spreadsheet will look like the one on the next page:



```
                            SLOWRIVER STAFF DEVELOPMENT PLAN
                            PROGRAM PLANNING
                            SUB PAY :    $85                WORKSHOPS / CONFERENCES    EVENING MEETINGS FOR:
---------------------------------------------------------------------------------------------------------------   TOTAL
                            DAYS FOR        DAYS FOR                STATE AT RISK TEACHING  BUDGET SCHEDULE    PER STAFF
                                MATH       LANG ARTS              READING  WKSHPS STRATEGY                        MEMBER
---------------------------------------------------------------------------------------------------------------
MICHELE       ALDER        |     2.0   $170      3.0    $255             $74                                   |     $499
JULIE         AYRES        |             $0               $0     $98     $74                                   |     $172
SARA          BLACKBIRD    |     2.0   $170               $0                                                   |     $170
SALLIE        COALBAGGIE   |             $0               $0                                                   |       $0
PHYLLIS       cook         |             $0               $0                                                   |       $0
JEAN          COORAN       |      .5    $42               $0             $50                                   |      $92
DONALD        CRAMER       |             $0               $0                                                   |       $0
PEGGY         DAYBORO      |             $0               $0                     $255                          |     $255
MARLENE       DUSK         |             $0      2.0    $170     $98                                           |     $268
KATHY         ELK          |             $0      2.5    $212     $98                                           |     $310
HARRY         FISHER       |             $0               $0                                                   |       $0
FRANK         GILLS        |             $0               $0                                                   |       $0
ZEAK          GLEASON      |             $0               $0                                                   |       $0
DON           HAZELBROOK   |             $0               $0                                                   |       $0
ROSE          HITCHMAN     |             $0               $0                                                   |       $0
KAREN         james        |             $0               $0                                                   |       $0
JOHN          JARRAD       |             $0               $0                                                   |       $0
MARGE         JENSEN       |             $0               $0                                                   |       $0
MEG           KIANDRA      |             $0               $0                                                   |       $0
FRED          LATTA        |             $0               $0                                                   |       $0
GERTRUDE      MAN          |             $0               $0                                                   |       $0
BILL          MANLEY       |             $0               $0                                                   |       $0
PAT           MCBEAN       |             $0               $0                                                   |       $0
MARLENE       MILLICAN     |             $0               $0                                                   |       $0
LESS          MOORE        |             $0               $0                                                   |       $0
KEN           MORBERG      |             $0               $0                                                   |       $0
SAMATHA       MUDJIMBA     |             $0               $0                                                   |       $0
ELLIE         MURRINGO     |             $0               $0                                                   |       $0
SUSAN         RICHMOND     |             $0               $0                                                   |       $0
JANET         TABB         |             $0               $0                                                   |       $0
DAVE          TARRA        |             $0               $0                                                   |       $0
JENNY         THORP        |             $0               $0                                                   |       $0
TERRY         TIGER        |             $0               $0                                                   |       $0
WILLA         WINGER       |             $0               $0                                                   |       $0
                           |                                                                                   |
===============================================================================================================
TOTAL PER COLUMN:                4.5   $382      7.5    $638    $294    $198     $255     $0      $0       $0 ‡   $1,767
```

To transfer teachers' names to a spreadsheet, first determine which categories to include and the order they are to appear on the spreadsheet.

1. From the Review/Add/Change screen, press Open-Apple L to change the layout.
2. Use Open-Apple D to remove all categories from this report except LAST NAME and FIRST NAME.
3. Switch the category positions to read: FIRST NAME LAST NAME

4. Press Escape to return to the Review/Add/Change screen.

5. Use Open-Apple A to Arrange the records alphabetically by last name.

6. Press Open-Apple R. Note that even though 10 categories have been removed from this report, you could still define record selection rules based upon their information (e.g., "NIGHT equals MON" to select teachers signed up for the Monday evening workshops).

7. We will use all the teachers in the spreadsheet, so press Escape.

## PART 3: COPYING DATABASE RECORDS TO THE CLIPBOARD (Open-Apple C)

1. Press Open-Apple C.

2. For where to copy, select: To clipboard.

3. We will copy every record. Use the Down Arrow key or Open-Apple 9 to highlight all the records.

4. Press Return.

## PART 4: BRINGING INFORMATION FROM THE DATABASE INTO THE SPREADSHEET

Now that we have copied database information to the Clipboard, we will create a new *AppleWorks* spreadsheet.

1. Escape to the Main Menu.

2. Select: 1. Add Files to the Desktop. ...................................... press **RETURN**

3. Select: 5. Make a new file for the Spreadsheet. .......................... press **RETURN**

4. Select: 1. From scratch .................................................. press **RETURN**

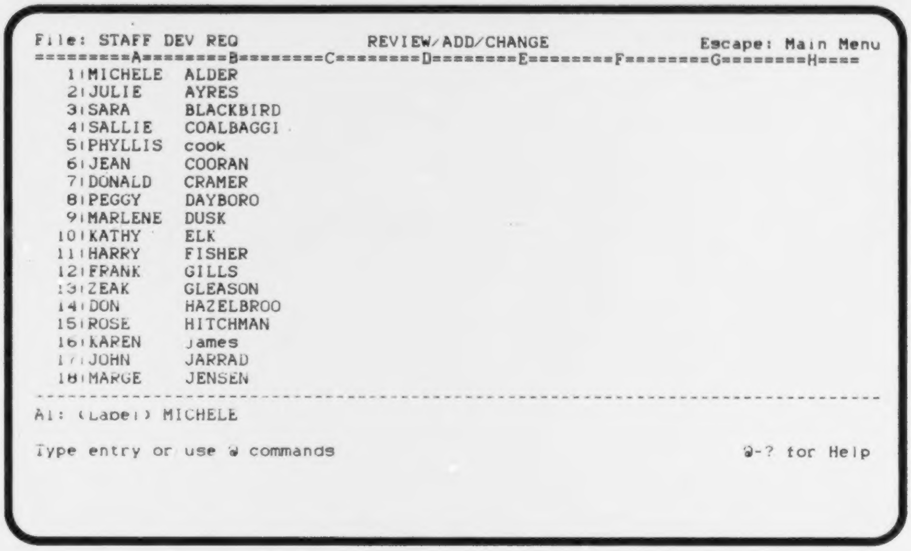
5. To give the new spreadsheet its own name, type: STAFF DEV REQ

6. Press Return.

7. *If necessary, switch to the SS PROGRAM disk*.......................... press **RETURN**

8. Now press Open-Apple C to copy the database records from the Clipboard.

9. Note that the new spreadsheet now displays all the default layout settings: columns are set for nine characters, label entries will be left justified, and value entries will be right justified with no decimal places.



```
File: STAFF DEV REQ            REVIEW/ADD/CHANGE             Escape: Main Menu
=========A=========B=========C=========D=========E=========F=========G=========H====
   1|MICHELE  ALDER
   2|JULIE    AYRES
   3|SARA     BLACKBIRD
   4|SALLIE   COALBAGGI
   5|PHYLLIS  cook
   6|JEAN     COORAN
   7|DONALD   CRAMER
   8|PEGGY    DAYBORO
   9|MARLENE  DUSK
  10|KATHY    ELK
  11|HARRY    FISHER
  12|FRANK    GILLS
  13|ZEAK     GLEASON
  14|DON      HAZELBROO
  15|ROSE     HITCHMAN
  16|KAREN    James
  17|JOHN     JARRAD
  18|MARGE    JENSEN
------------------------------------------------------------------------------------
A1: (Label) MICHELE

Type entry or use @ commands                                          @-? for Help
```

10. Save your work.

At this point we have finished examining the database screen and print features. We have also examined the various methods for transferring database information to other database files, to word processor documents, and to a spreadsheet.

In Chapter Six, you will learn another method for transferring database information through the Clipboard to a word processor document. This process is available through the mail merge capabilities in *AppleWorks* 2.0 and 3.0.

At this point, you could also return to Chapter Four. Activity 7 in that chapter begins with STAFF DEV R the *AppleWorks* spreadsheet file you just created. In that activity you fill in some spreadsheet information, review the various spreadsheet layout options, and try out a few more spreadsheet "tricks" such as setting Standard Values and determining when formulas are to be recalculated. If you think it's time for a spreadsl review, turn back to Activity 7.

# CHAPTER SIX

## MAIL MERGE

To **mail merge** means to take information from one source—usually a database, and *insert* it into a another source—usually a word processed form letter. In business, mail merge programs are vital for generating all those "Dear Ms. Jones" letters. In the school setting, mass mailing correspondence dealing with academic or discipline reports, attendance, library overdues, etc., can be customized through this very efficient process.

Originally *AppleWorks* did not come with mail merge capabilities. This was very disappointing considering both database and word processor files can be on the Desktop at the same time. With version 2.0, and now 3.0, this feature has been added. The process for mail merging now involves:

- Preparing a database file to display the categories and records you want to use;
- Transferring this database information to the Clipboard;
- Writing a word processed form letter, *marking* where you want certain database information to appear; and
- Printing a separate, personalized (merged) letter for each database record sent to the Clipboard. These letters can be printed immediately, or stored as a special file on your data disk.

## ACTIVITY 1
## LEARNING TO MAIL MERGE

In this activity we will examine the four basic mail merge steps. We will personalize a form letter inviting selected computing educators to a back-to-school open house at Slowriver School's new computer facilities. For this activity the word processor letter has already been set up. A database containing the names, addresses, and employer for computer educators has also been set up.

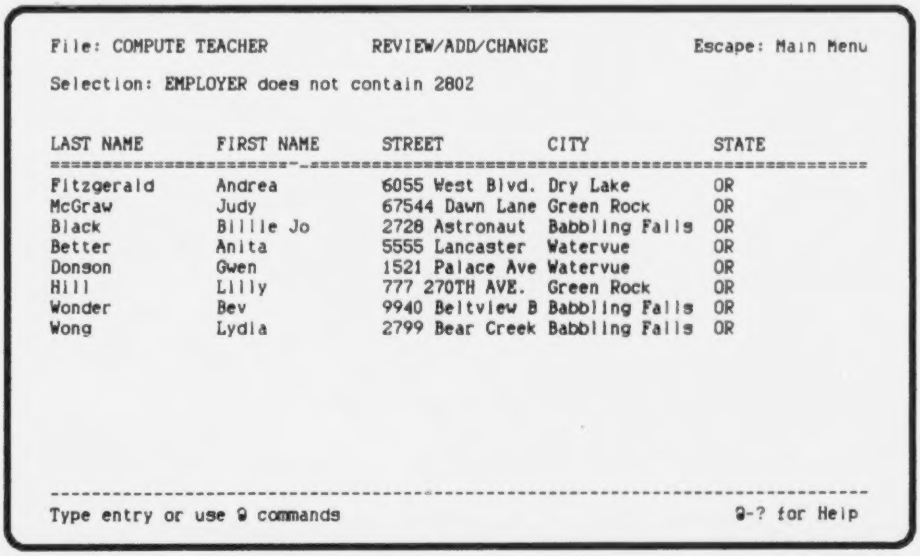
### PART 1: ADDING FILES TO THE DESKTOP

1. Load *AppleWorks*.
2. Begin at the Main Menu.
3. Add both the OCTOBER MEETING word processor file and COMPUTE TEACHER database file to the Desktop.

## PART 2: EXAMINING THE DATABASE

Steelhead School's computer coordinator is planning an open house in the school's new computer facilities. Two groups of interested educators need to be notified of the time, place, and agenda: Those members who can be contacted during the school year through the in-district mail, and those who need correspondence sent directly to their homes.

1. From the Desktop Index select the COMPUTE TEACHER database and become familiar with the various categories.
   a. Zoom in on Shar Kingfisher's record. Note that her record contains address and employment information, computer brand, and areas of computing interest.
   b. Note that Shar teaches at Willow Elementary School, in the Slowriver 280Z school district.
   c. Use the Open-Apple/Down Arrow key combination to move to the next record. Note that Andrea is on leave this year. Since she is not sure what she will be doing when she returns to the school district, the POSITION field has not been filled in.
   d. Continue to use the Open-Apple/Down Arrow keys to view the records for the other 28 members. Keep an eye on the EMPLOYER category. In this activity we will be sending a letter to computing teachers who *do not* receive the Slowriver 280Z school mail.
2. Zoom out to switch to the multiple-record screen.
3. To determine which members will be receiving their meeting notices at home, write a record selection rule in which members who are *not* employed by the 280Z school district are selected.
4. Your screen should look like this:



```
File: COMPUTE TEACHER          REVIEW/ADD/CHANGE            Escape: Main Menu

Selection: EMPLOYER does not contain 280Z


LAST NAME      FIRST NAME     STREET          CITY           STATE
=======================-_===================================================
Fitzgerald     Andrea         6055 West Blvd. Dry Lake       OR
McGraw         Judy           67544 Dawn Lane Green Rock     OR
Black          Billie Jo      2728 Astronaut  Babbling Falls OR
Better         Anita          5555 Lancaster  Watervue       OR
Donson         Gwen           1521 Palace Ave Watervue       OR
Hill           Lilly          777 270TH AVE.  Green Rock     OR
Wonder         Bev            9940 Beltview B Babbling Falls OR
Wong           Lydia          2799 Bear Creek Babbling Falls OR








----------------------------------------------------------------------------
Type entry or use @ commands                                    @-? for Help
```

5. Zoom in and note where they work.
6. Use the Open-Apple Z command to again view the names and addresses for the eight educators who will be receiving their invitations at home.
7. To sort records so that they are in the order you want the letters printed, use Open-Apple A to alphabetize *by last name*.

## PART 3: SENDING DATABASE RECORDS TO THE CLIPBOARD FOR MAIL MERGE

Now we will simply copy the eight on-screen records to the Clipboard.

1. Press Open-Apple C.
2. For copy, select: To Clipboard.
3. Use the Down arrow key to highlight the eight records.
4. Press Return.
5. Although no message was displayed, all information for the eight records is now on the Clipboard ready to be merged.

## PART 4: PREPARING THE WORD PROCESSOR FILE FOR MAIL MERGE

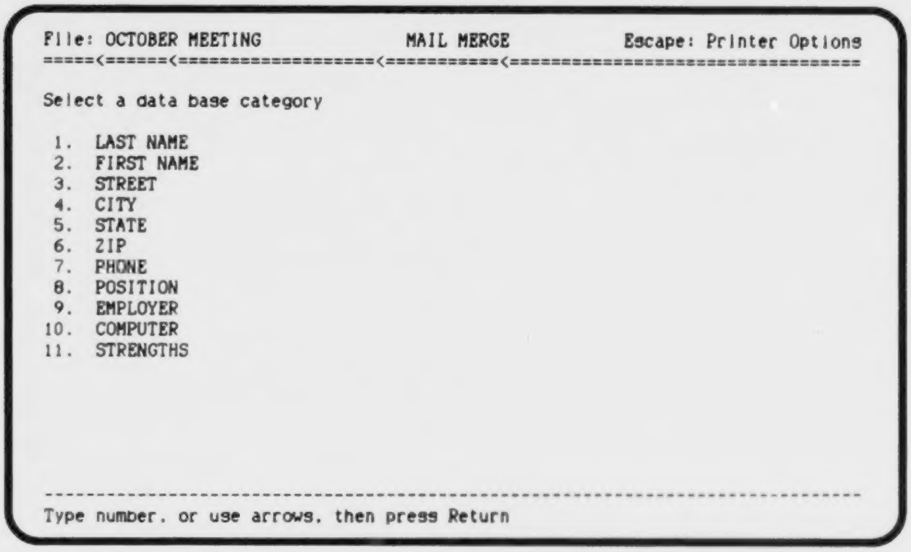
Now we will switch to an existing word processor file and place *markers* where database information is to appear; e.g., name and address at the top of the letter, a name after "Dear."

1. Press Open-Apple Q and switch to OCTOBER MEETING.
2. Press Open-Apple Z so all printer option are visible.

Beginning on line 14 we will merge a name and address into the form letter.

3. Place the cursor on Line 14, Column 1. Remember, you can quickly determine the line number by referring to the indicator at the bottom of the screen.
4. To set the first category mail merge press Open-Apple O.
5. Select: MM (for Mail Merge) ............................................... press **RETURN**

The following database categories should now be on the screen:



```
File: OCTOBER MEETING             MAIL MERGE          Escape: Printer Options
=====<======<===================<===========<=================================

Select a data base category

 1.  LAST NAME
 2.  FIRST NAME
 3.  STREET
 4.  CITY
 5.  STATE
 6.  ZIP
 7.  PHONE
 8.  POSITION
 9.  EMPLOYER
10.  COMPUTER
11.  STRENGTHS






------------------------------------------------------------------------------
Type number, or use arrows, then press Return
```

6. From the list of available database categories, select: FIRST NAME.
7. Press Return.
8. For the next question, select: No.
9. Note that the category marker **^<FIRST NAME>** has been inserted into the letter.

**NOTE**: The triangular brackets ( <> ) means that *AppleWorks* will print a spacing line if this entry *is blank*, and there is no other text on the line.

10. Next we will insert the LAST NAME category.

**NOTE**: Don't worry about adding a space between the markers for *first name* and *last name*. If you put more than one category marker side-by-side on a single line, *AppleWorks* will automatically add one space between the two categories.

11. Again select: MM. ............................................................... press **RETURN**

12. Select: LAST NAME........................................................ press **RETURN**
Again answer NO.

On line 14 your screen should display: **^<FIRST NAME> ^<LAST NAME>.**

13. To move the cursor to the next line we must press Escape (to leave the Options Menu).
14. Press Return to move the cursor to line 15.
15. Repeat steps 4 and 5 to insert **^[POSITION]** on line 15.
16. This time answer *Yes*.
This time we are choosing *not* to have a spacing line printed if the POSITION category is blank.

**NOTE:** Rectangular brackets ( [ ] ) around the category [POSITION] mean that *AppleWorks* will close up the gap without inserting a spacing line if there is no entry in this category and no other text on the line.

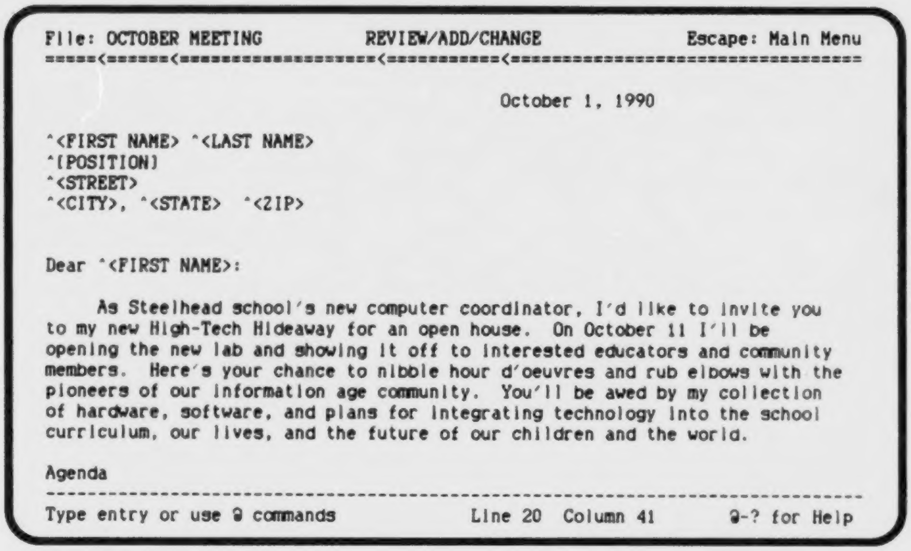
For the Mail Merge process to work correctly, do not delete any of the punctuation marks used to identify mail merge markers.

17. Press Escape and move the cursor to line 16. Insert **^<STREET>**. On line 17 insert **^<CITY>**.
18. While on line17 type a comma right after **^<CITY>**. Then use the Space Bar to enter a blank space.

**NOTE:** To have punctuation follow a category name without an intervening space, you *must* delete the space *AppleWorks* adds after a category marker.

19. While on line17 next enter: **^<STATE>** and **^<ZIP>** side-by-side.
20. Escape to the Review/Add/Change screen, press the Return key to move the "Dear" down to line 20.
21. Move the cursor one blank space after "Dear."
22. Insert **^<FIRST NAME>**.
23. To complete this form letter, type a colon right after this category marker.

Your screen should now look like this:



```
File: OCTOBER MEETING          REVIEW/ADD/CHANGE              Escape: Main Menu
=====<======<===================<===========<==================================

                                             October 1, 1990

^<FIRST NAME> ^<LAST NAME>
^[POSITION]
^<STREET>
^<CITY>, ^<STATE>  ^<ZIP>


Dear ^<FIRST NAME>:

     As Steelhead school's new computer coordinator, I'd like to invite you
to my new High-Tech Hideaway for an open house.  On October 11 I'll be
opening the new lab and showing it off to interested educators and community
members.  Here's your chance to nibble hour d'oeuvres and rub elbows with the
pioneers of our information age community.  You'll be awed by my collection
of hardware, software, and plans for integrating technology into the school
curriculum, our lives, and the future of our children and the world.

Agenda
-------------------------------------------------------------------------------
Type entry or use @ commands            Line 20  Column 41       @-? for Help
```

> **NOTE**: If you incorrectly place a category marker in a form letter, you can use the Delete key or Open-Apple Y to erase it. Remember though, *do not delete any of the punctuation marks or alter the spelling of any category names.*

> **NOTE**: Because the *AppleWorks* mail merge automatically positions the sheets of printer paper for the each personalized letter, you *do not* have to indicate a page break at the end of this letters with an NP printer option. However, if you are working with a letter quality printer, do a test run first.

24. Save this OCTOBER MEETING file. This file could become a handy template for frequent correspondence with teachers in the COMPUTE TEACHE database.

## PART 5: PRINTING MERGED LETTERS DIRECTLY TO THE PRINTER

Once the category markers have been set in the form letter, printing a series of personalized letters is remarkably simple. *In order to complete this next part you must be connected to a printer.*

1. From the Review/Add/Change screen of the OCTOBER MEETING file, press Open-Apple P.
2. For print from, select: Beginning.
3. Choose the printer you are going to use. .................................. press **RETURN**
4. From the Print Menu, Select: Merge database items with this document. .................................................................. press **RETURN**
5. Select 1 copy and print.

> **NOTE**: If you've used the Clipboard since you printed the database records to the Clipboard, you will receive the message: There's no mail-merge data on the Clipboard. You will then need to switch to the database and again copy selected records to the Clipboard.

6. When the first customized letter has been printed, press Escape to interrupt the printing and return you to the Review/Add/Change screen.

> **NOTE**: The printer will continue to process text it has already received. Pressing Escape will stop the print routine, once the printer buffer is empty. If too much text is being printed, you can also turn off the printer.

7. When printing has discontinued, examine the two or more letters that have been generated using the mail merge process.
8. To send this invitation to teachers within the 280Z school district, you would:
   - Remove the address category markers;
   - Insert a **^<EMPLOYER>** marker;
   - Change the record selection rule in the COMPUTE TEACHER database;

- Copy selected records to the Clipboard; and
- Print the OCTOBER MEETING letter with merged database items.

9. If you have time, review these steps and print two letters.

We have now examined the basic steps involved in preparing and printing mail merged documents. In the next activity we will review these steps, consider calculated columns, and examine ways to insert more text directly into the body of a word processed document.

# ACTIVITY 2
# MAIL MERGING DATA FROM CALCULATED CATEGORIES

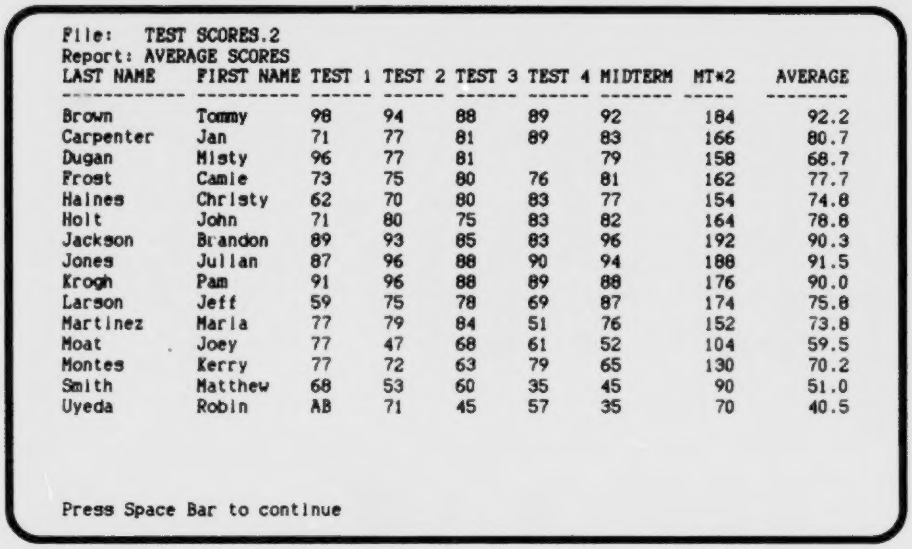
## PART 1: ADDING FILES TO THE DESKTOP

1. Begin at the Main Menu.
2. Add both the PROG REPORT.A word processor file and the TEST SCORES.2 database file to the Desktop.
3. From the Desktop Index select: TEST SCORES.2.

## PART 2: EXAMINING THE DATABASE

You worked with this database in Chapter 5. At that time you set up two table-style report formats, one recording test and midterm scores, the other containing calculated categories for weighting the midterm and determining the student's average test score thus far for the term. In this activity, we will include information from the second report in the student progress reports, and as we will be sending calculated category data to the Clipboard, we will have to work from within a table report format.

1. Note the following category and report format details.
    a. This database contains the test and midterm results for 15 students.
    b. Zoom in and note that the last four categories do not contain specific category names or data.
    c. Note that no calculated categories are displayed at this time.
2. Press Open-Apple P and get the TEST RESULTS report format.
3. Print this report to the screen to view scores for the four tests and the midterm.
4. Escape to the Report Menu screen and now get the AVERAGE SCORES report format.
5. Move the cursor to the calculated category, column H (MT*2) and press Open-Apple K.
6. Select: Edit column H. Press Return to review how this calculated category was set up.
7. Move the cursor to column I (AVERAGE), press Open-Apple K, select Edit column I, and review the calculation rule used in this calculated category: C+D+E+F+H/6
8. When done examining column I, print this report to the screen:



```
File:    TEST SCORES.2
Report: AVERAGE SCORES
LAST NAME    FIRST NAME TEST 1 TEST 2 TEST 3 TEST 4 MIDTERM MT*2     AVERAGE
------------ ---------- ------ ------ ------ ------ ------- -----    --------
Brown        Tommy      98     94     88     89     92        184        92.2
Carpenter    Jan        71     77     81     89     83        166        80.7
Dugan        Misty      96     77     81            79        158        68.7
Frost        Camie      73     75     80     76     81        162        77.7
Haines       Christy    62     70     80     83     77        154        74.8
Holt         John       71     80     75     83     82        164        78.8
Jackson      Brandon    89     93     85     83     96        192        90.3
Jones        Julian     87     96     88     90     94        188        91.5
Krogh        Pam        91     96     88     89     88        176        90.0
Larson       Jeff       59     75     78     69     87        174        75.8
Martinez     Maria      77     79     84     51     76        152        73.8
Moat         Joey       77     47     68     61     52        104        59.5
Montes       Kerry      77     72     63     79     65        130        70.2
Smith        Matthew    68     53     60     35     45         90        51.0
Uyeda        Robin      AB     71     45     57     35         70        40.5




Press Space Bar to continue
```

This is the data we will send to the Clipboard.

9. When back at the Report Format screen, try writing a record selection rule using either of the calculated categories, MT*2 or AVERAGE. No luck. Unfortunately we cannot search (Open-Apple R), or arrange (Open-Apple A) with calculated categories. Since the mail merge process often involves selected records, we will need to make a minor adjustment if we want to send different correspondence to two sets of students.

## PART 3: CHANGING A CATEGORY NAME (OPEN-APPLE N)

In this activity two progress report forms will be used, one commending students for their progress thus far in the term, and another for students with unsatisfactory test results. Both reports will contain the students' test results (data that was entered) and average test score (data that was calculated).

As you saw in Activity 1, merging database information into a word processed form letter can be a great timesaver. And with the *AppleWorks* mail merge we can even merge the results from *calculated categories.*

There is one slight problem, however. Since *AppleWorks* does not allow us to write record selection rules using calculated categories, right now we can't select students according to their overall test average. To get around this, we will enter some type of a code into one of the *extra non-calculated* categories we set up when we first worked with this database.

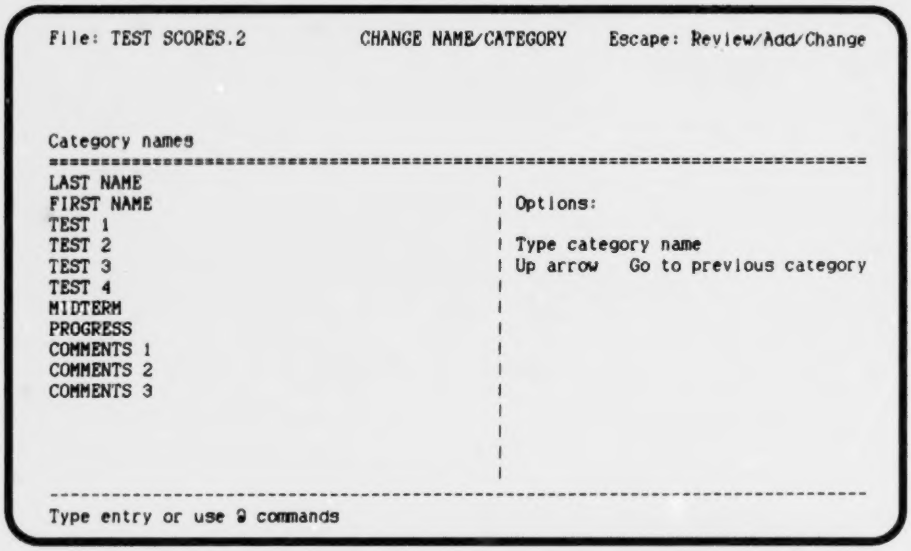
1. Escape back to the Review/Add/Change screen.
2. We will change some category names, so press Open-Apple N.
3. Press Return to leave the filename unchanged.

4. Use Open-Apple Y to replace the first asterisk category name with PROGRESS.

> **NOTE**: Since we merely changed a category name, no custom layouts will set back to standard or report formats erased. If we had *deleted* or *added* a category name, however, these would have been affected.

Since we are changing category names, we will take this opportunity to assign names to the last three categories.

5. Use Open-Apple Y to replace the next asterisk category name with COMMENTS 1.
6. Continue replacing category names with Open-Apple Y until your screen looks like this:



```
File: TEST SCORES.2           CHANGE NAME/CATEGORY     Escape: Review/Add/Change




Category names
================================================================================
LAST NAME                                   |
FIRST NAME                                  | Options:
TEST 1                                      |
TEST 2                                      | Type category name
TEST 3                                      | Up arrow   Go to previous category
TEST 4                                      |
MIDTERM                                     |
PROGRESS                                    |
COMMENTS 1                                  |
COMMENTS 2                                  |
COMMENTS 3                                  |
                                            |
                                            |
                                            |
                                            |
--------------------------------------------------------------------------------
Type entry or use @ commands
```

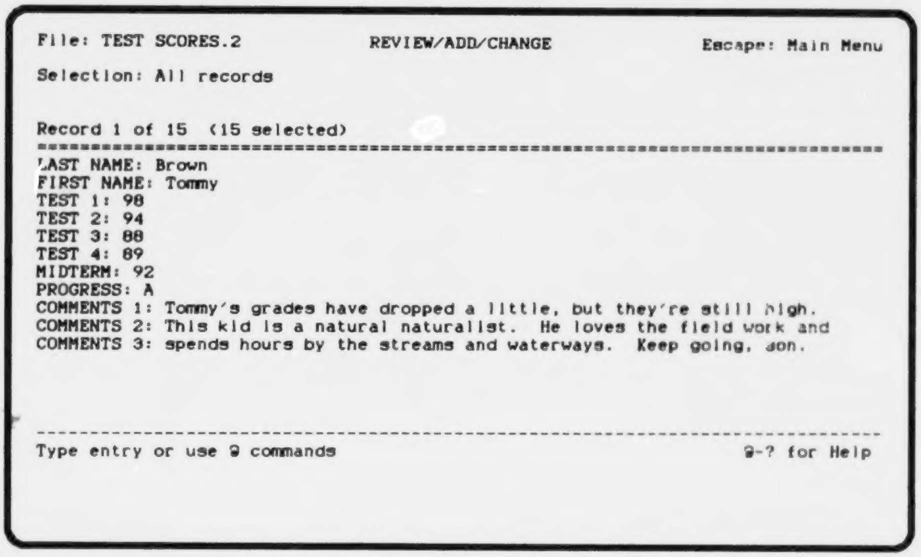
7. When done, Escape to the Review/Add/Change screen.

## PART 4: ENTERING TEXT

When you printed the AVERAGE SCORES report to the screen in Part 2, you were able to view the students with average scores above 90% and those with scores below 60%. To distinguish the two groups of students we will enter either an "A" or "F" in the PROGRESS category for seven students.

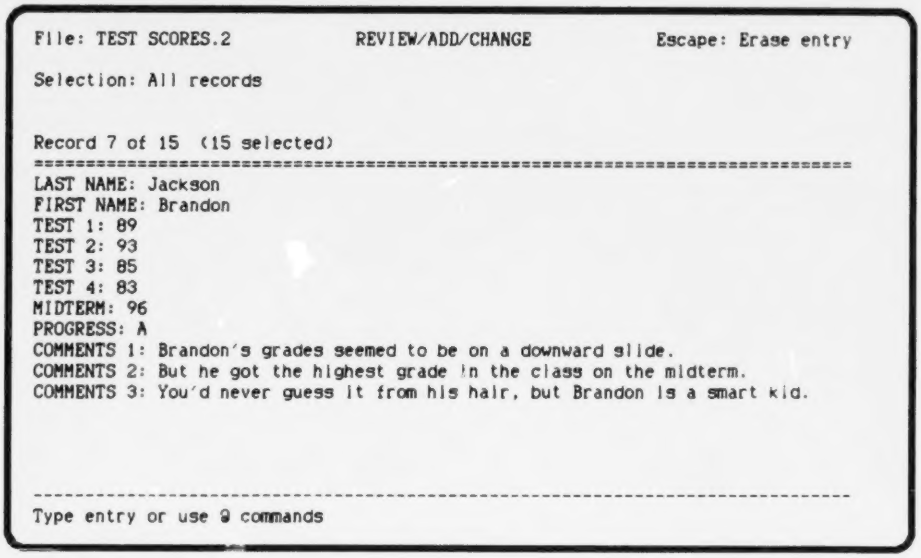
Thus far we have merged relatively brief database information (name, address, etc.) into a word processor document. Database categories can contain phrases or complete sentences, and these can be inserted into the text of a letter. For this activity, appropriate comments will also be entered directly in the database and later merged into the Student Progress report.

1. Zoom in on Tommy Brown's record.
2. Enter the following information in the last four categories:



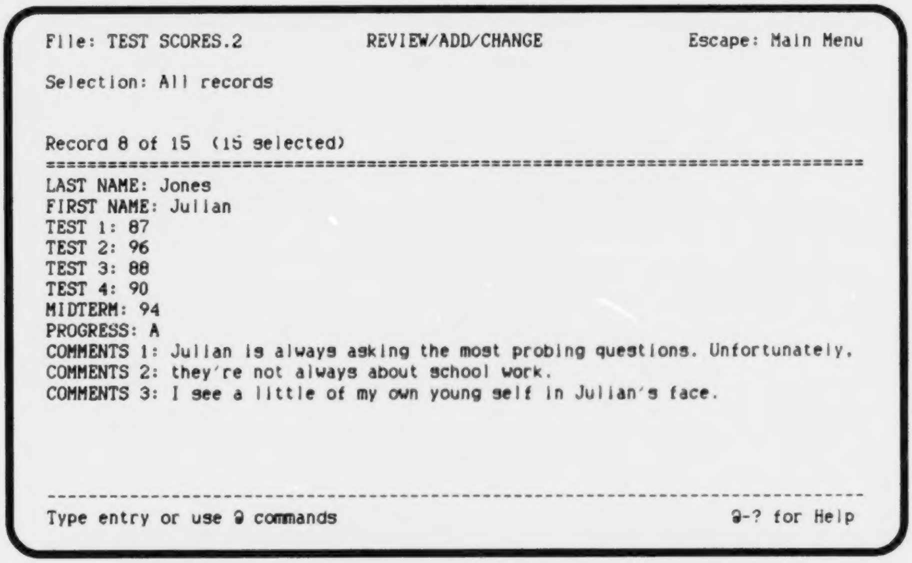
```
File: TEST SCORES.2          REVIEW/ADD/CHANGE          Escape: Main Menu

Selection: All records

Record 1 of 15  (15 selected)
==============================================================================
LAST NAME: Brown
FIRST NAME: Tommy
TEST 1: 98
TEST 2: 94
TEST 3: 88
TEST 4: 89
MIDTERM: 92
PROGRESS: A
COMMENTS 1: Tommy's grades have dropped a little, but they're still high.
COMMENTS 2: This kid is a natural naturalist.  He loves the field work and
COMMENTS 3: spends hours by the streams and waterways.  Keep going, son.



------------------------------------------------------------------------------
Type entry or use 9 commands                                     9-? for Help
```

3. Switch to Brandon Jackson's record and enter:

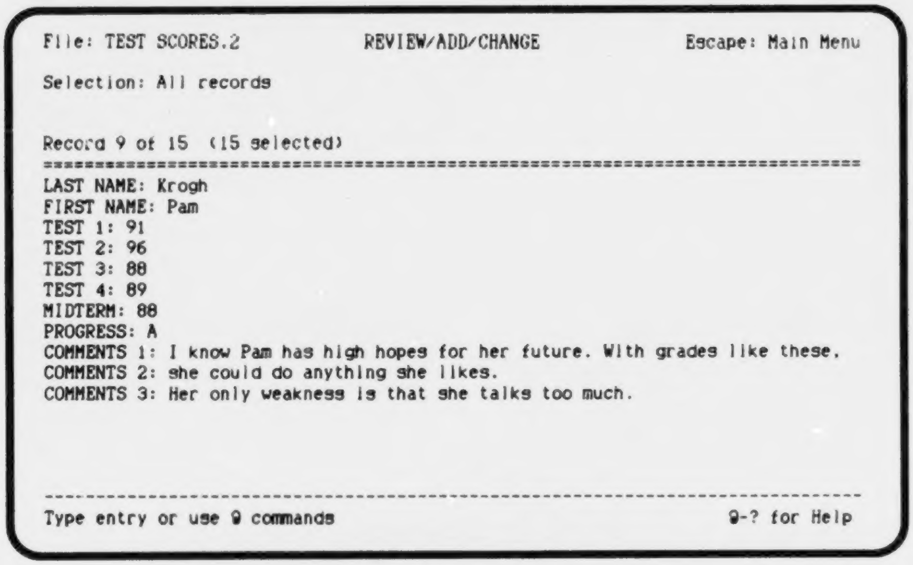


```
File: TEST SCORES.2          REVIEW/ADD/CHANGE          Escape: Erase entry

Selection: All records

Record 7 of 15  (15 selected)
==============================================================================
LAST NAME: Jackson
FIRST NAME: Brandon
TEST 1: 89
TEST 2: 93
TEST 3: 85
TEST 4: 83
MIDTERM: 96
PROGRESS: A
COMMENTS 1: Brandon's grades seemed to be on a downward slide.
COMMENTS 2: But he got the highest grade in the class on the midterm.
COMMENTS 3: You'd never guess it from his hair, but Brandon is a smart kid.



------------------------------------------------------------------------------
Type entry or use 9 commands
```

4. For Julian Jones and Pam Krogh enter:



```
File: TEST SCORES.2           REVIEW/ADD/CHANGE             Escape: Main Menu

Selection: All records


Record 8 of 15  (15 selected)
==============================================================================
LAST NAME: Jones
FIRST NAME: Julian
TEST 1: 87
TEST 2: 96
TEST 3: 88
TEST 4: 90
MIDTERM: 94
PROGRESS: A
COMMENTS 1: Julian is always asking the most probing questions. Unfortunately,
COMMENTS 2: they're not always about school work.
COMMENTS 3: I see a little of my own young self in Julian's face.




------------------------------------------------------------------------------
Type entry or use 9 commands                                       9-? for Help
```



```
File: TEST SCORES.2           REVIEW/ADD/CHANGE             Escape: Main Menu

Selection: All records


Record 9 of 15  (15 selected)
==============================================================================
LAST NAME: Krogh
FIRST NAME: Pam
TEST 1: 91
TEST 2: 96
TEST 3: 88
TEST 4: 89
MIDTERM: 88
PROGRESS: A
COMMENTS 1: I know Pam has high hopes for her future. With grades like these,
COMMENTS 2: she could do anything she likes.
COMMENTS 3: Her only weakness is that she talks too much.




------------------------------------------------------------------------------
Type entry or use 9 commands                                       9-? for Help
```

5. For the three students with average scores less than 60% (Joey Moat, Matthew Smith, and Robin Uyeda) enter an F in their PROGRESS category.

6. We will leave the comments categories empty for these students. Later we can enter appropriate entries.

## PART 5: PREPARING A TABLE FORMAT

Now we will use the report format containing the weighted midterm score and test score average.

1. From the Review/Add/Change screen press Open-Apple P and choose To Get a Report format.
2. Select: AVERAGE SCORES................................................ press **RETURN**
3. Use Open-Apple A to alphabetize student records *by last name*.
4. Use Open-Apple R to select students who have an "A" in their PROGRESS category.
5. Move the cursor to the LEN 79 indicator and use Open-Apple I to include the COMMENTS 1 category in this report.

> **NOTE**: You can determine which categories of information will be printed to the Clipboard by including or hiding them within the report format.
>
> If a category has been hidden (using Open-Apple D), it will not be available later as a Mail Merge category.

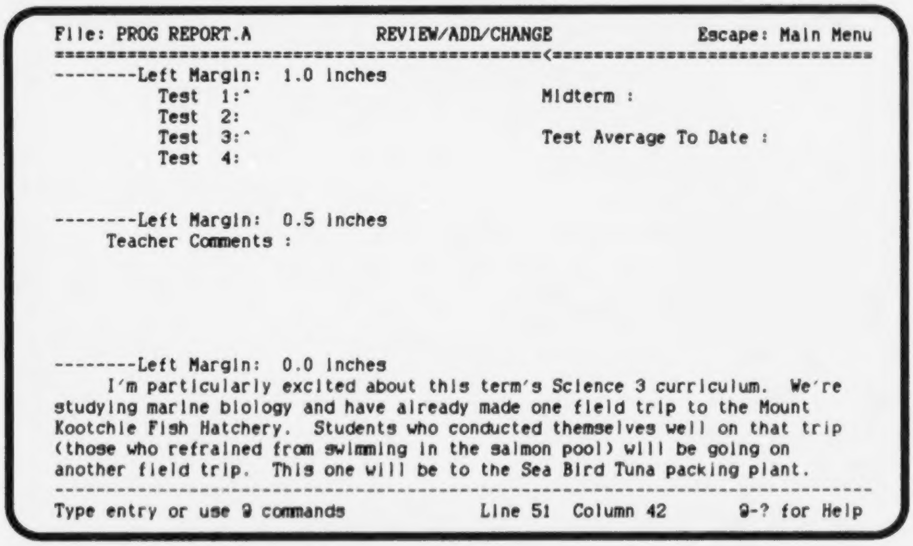
6. Again move the cursor to the LEN indicator and include the COMMENTS 2 and COMMENTS 3 categories.
7. To see whether the correct students have been selected, move the cursor to column A and print this report to the screen.
8. After returning to the Report Format screen, again press Open-Apple P.
9. This time select: 4. The Clipboard (for Mail Merge).
   (No, that printer option was not there before version 2.0).
10. Press Return and note that student data is now on the Clipboard.

> **NOTE**: The mail merge process requires that from within a report format you *print* data to the Clipboard. *Copying* or *moving* data will not result in the correct placement.
>
> From this point on, *do not* use the Clipboard for any copying or moving, until after you are through printing the form letters.

## PART 6: SETTING UP THE WORD PROCESSOR FILE

Now we will switch to an existing word processor file and place a mail merge *marker* where database information is to appear.

1. Press Open-Apple Q and switch to PROG REPORT.A.
2. Press Open-Apple Z to examine the printer options that have been used to set up the school letterhead.
3. Note where boldface print and underlining will appear.
4. Move the cursor to line 51 and note how the Left Margin has been set for the test results, teacher comments, and concluding paragraph:



```
File: PROG REPORT.A           REVIEW/ADD/CHANGE           Escape: Main Menu
============================================<=============================
--------Left Margin:  1.0 inches
          Test  1:^                             Midterm :
          Test  2:
          Test  3:^                             Test Average To Date :
          Test  4:


--------Left Margin:  0.5 inches
     Teacher Comments :




--------Left Margin:  0.0 inches
     I'm particularly excited about this term's Science 3 curriculum.  We're
studying marine biology and have already made one field trip to the Mount
Kootchie Fish Hatchery.  Students who conducted themselves well on that trip
(those who refrained from swimming in the salmon pool) will be going on
another field trip.  This one will be to the Sea Bird Tuna packing plant.
--------------------------------------------------------------------------
Type entry or use 9 commands              Line 51  Column 42       9-? for Help
```

5. To work with a less cluttered screen, press Open-Apple Z.
6. Enter the following information. Be sure to use the Arrow keys (not the Space Bar) to move the cursor.
   a. For Class, enter: Science 3.
   b. For Room, enter: B12.
   c. For Teacher Name, enter: Mr. Kilroy Tanker.
   d. For Semester, enter: Fall.
7. Position the cursor after "Student Name:" and select the Mail Merge option from the Printer Options menu.
8. Twelve categories are available for merging, including the two calculated categories. Also note that the PROGRESS category is not displayed.

9. Add **^<FIRST NAME> ^<LAST NAME>** markers to the progress report.

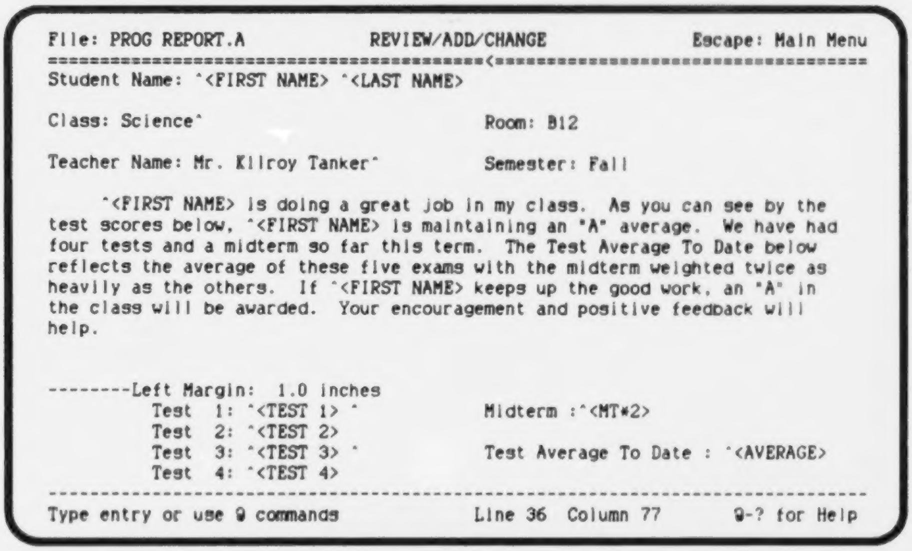
10. Next substitute a **^<FIRST NAME>** marker for each occurrence of STUDENT in the first paragraph. Be aware of the spacing between words.

11. When back on the Review/Add/Change screen, position the cursor after Test 1: (on column 20).

12. Insert the **^<TEST 1>** marker.
    Note that "Mid Term:" heading has moved over.

13. After "Test 2:" insert the **^<TEST 2>** marker.

14. Continue adding the following category markers:



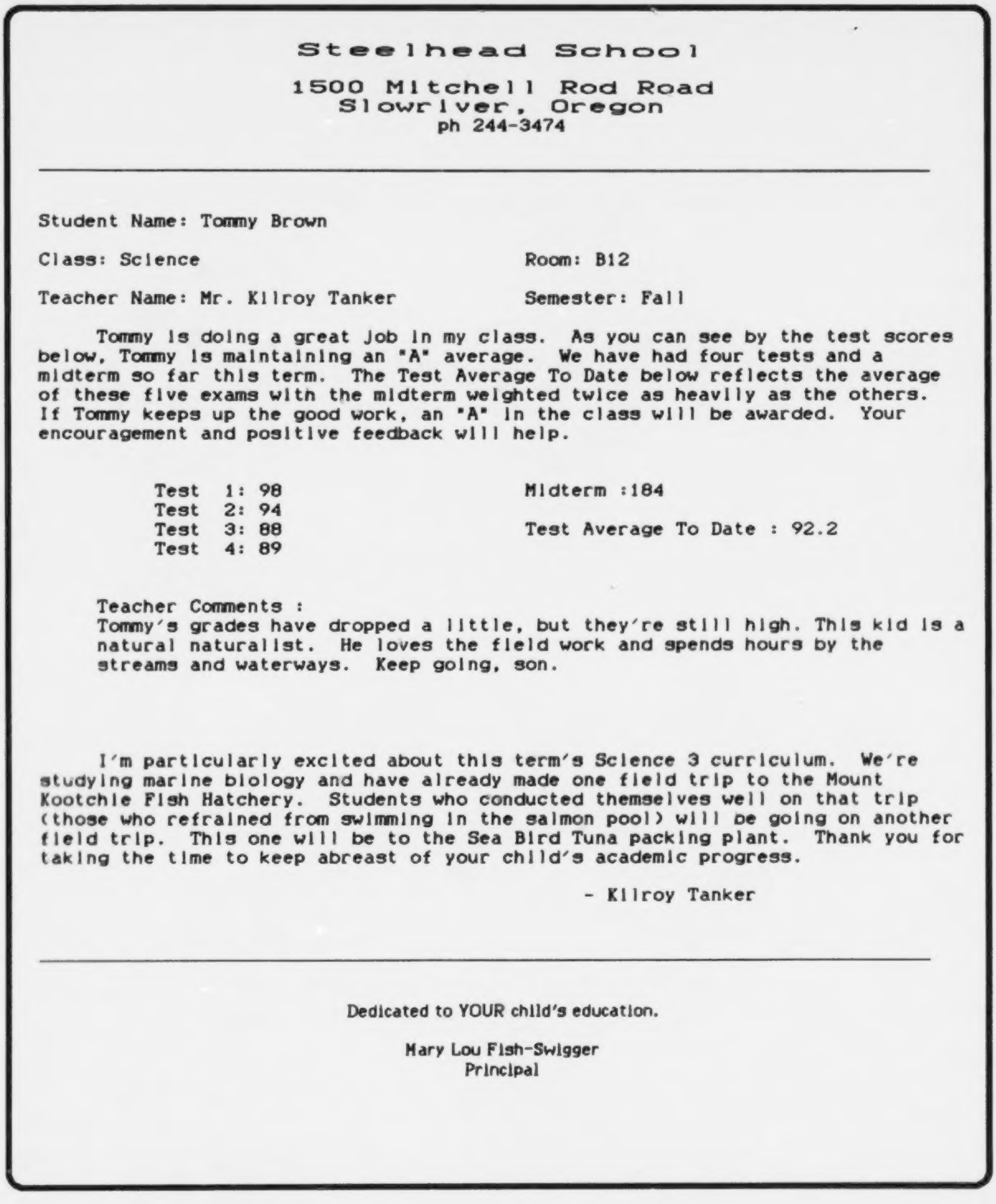
```
File: PROG REPORT.A           REVIEW/ADD/CHANGE             Escape: Main Menu
=======================================<=====================================
Student Name: ^<FIRST NAME> ^<LAST NAME>

Class: Science^                               Room: B12

Teacher Name: Mr. Kilroy Tanker^              Semester: Fall

     ^<FIRST NAME> is doing a great job in my class.  As you can see by the
test scores below, ^<FIRST NAME> is maintaining an "A" average.  We have had
four tests and a midterm so far this term.  The Test Average To Date below
reflects the average of these five exams with the midterm weighted twice as
heavily as the others.  If ^<FIRST NAME> keeps up the good work, an "A" in
the class will be awarded.  Your encouragement and positive feedback will
help.


--------Left Margin:  1.0 inches
          Test  1: ^<TEST 1> ^                Midterm :^<MT*2>
          Test  2: ^<TEST 2>
          Test  3: ^<TEST 3> ^                Test Average To Date : ^<AVERAGE>
          Test  4: ^<TEST 4>
-----------------------------------------------------------------------------
Type entry or use 9 commands              Line 36  Column 77        9-? for Help
```

15. To complete this progress report mail merge template, place the three COMMENTS categories side-by-side on the line *under* "Teacher Comments:".

> **NOTE**: In order for the Mail Merge process to work correctly, *you cannot have two categories with the exact same name in your database*. If we had named the three categories simply "COMMENTS," *AppleWorks* would merge and print the letter, however the entry in one of the COMMENTS categories would be repeated three times.

16. From the Review/Add/Change screen of the PRINT REPORT.A file, press Open-Apple P.
17. Choose the printer you are going to use and print merging database items.
18. Again press Escape after the first progress report has been printed.

19. Your first mail merged student report should look like this:



Steelhead School

1500 Mitchell Rod Road
Slowriver, Oregon
ph 244-3474

---

Student Name: Tommy Brown

Class: Science Room: B12

Teacher Name: Mr. Kilroy Tanker Semester: Fall

Tommy is doing a great job in my class. As you can see by the test scores below, Tommy is maintaining an "A" average. We have had four tests and a midterm so far this term. The Test Average To Date below reflects the average of these five exams with the midterm weighted twice as heavily as the others. If Tommy keeps up the good work, an "A" in the class will be awarded. Your encouragement and positive feedback will help.

Test 1: 98 Midterm :184
Test 2: 94
Test 3: 88 Test Average To Date : 92.2
Test 4: 89

Teacher Comments :
Tommy's grades have dropped a little, but they're still high. This kid is a natural naturalist. He loves the field work and spends hours by the streams and waterways. Keep going, son.

I'm particularly excited about this term's Science 3 curriculum. We're studying marine biology and have already made one field trip to the Mount Kootchie Fish Hatchery. Students who conducted themselves well on that trip (those who refrained from swimming in the salmon pool) will be going on another field trip. This one will be to the Sea Bird Tuna packing plant. Thank you for taking the time to keep abreast of your child's academic progress.

- Kilroy Tanker

---

Dedicated to YOUR child's education.

Mary Lou Fish-Swigger
Principal

## PART 7: PRINTING NEW RECORDS TO THE CLIPBOARD

Setting up the database table and printing new student records to the Clipboard is now a simple task.

1. Quickly switch to the TEST SCORES.2 database.
2. Press Open-Apple P and get the AVERAGE SCORES report.
3. Write a record selection rule identifying students with scores under 60%.

> **NOTE**: Again we will have to use the *non*-calculated category, PROGRESS, since no record selection rules can be based upon calculated categories. The process for getting around this *AppleWorks* limitation is somewhat cumbersome (having to enter code words in non-calculated categories in order to write record selection rules), but once completed it is an effective method.

4. Print to the screen to make sure you have Joey, Matthew, and Robin.
5. Print this report to the Clipboard for Mail Merging.
6. When done, switch back to the PROG REPORT.A file.

## PART 8: PRINTING A MAIL MERGED DOCUMENT WITH ADDITIONAL KEYBOARD ENTRIES

We now have a word processed template for sending progress reports to students receiving high scores. With a few adjustments we can have this file serve as a *progress report template* for students with very low scores.

For this set of reports we will not include comments merged from the database. This time we will use the *AppleWorks* feature for entering text directly from the keyboard and add comments as the report is actually being printed.

First we will adjust information within the file.

1. Use Open-Apple N to change the name of the file to PROG REPORT.F.
2. Change the introductory paragraph to read:

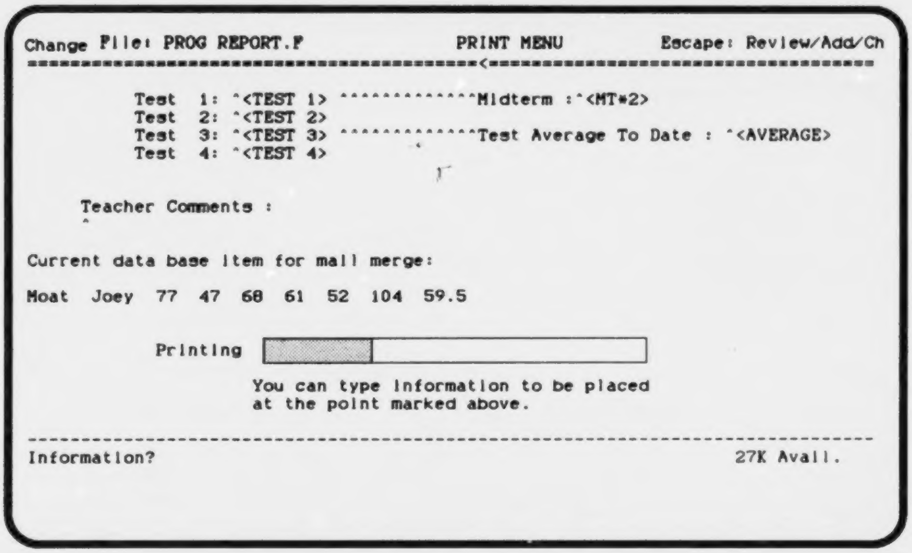
   "As you can see by the grade report below, **^<FIRST NAME>** is not doing well in Science 3. **^<FIRST NAME>** has managed to maintain a failing grade average through the first half of the term. We have had four tests and a midterm so far this year. The Test Average To Date below reflects the average of these exams with the midterm weighted twice as heavily as the others. If these grades don't improve soon, **^<FIRST NAME>** is going to fail my class."

We will continue to use the test scores and overall averages from the database. These markers will remain unchanged. We will not use information from the COMMENT fields.

3. Use Open-Apple Y to erase the COMMENTS 1, COMMENTS 2, and COMMENTS 3 markers.
4. With the cursor on the line under "Teacher Comments: " press Open-Apple O.
5. From the Printer Options menu, enter *three* EK (Enter from Keyboard) printer settings.
6. When back on the Review/Add/Change screen insert a blank space between each EK caret.

To better control how quickly each page will be printed, we will add one more handy printer setting.

7. Move the cursor to the top of the file and add a PE (Pause Each page) setting from the Printer Options menu.
8. Begin the Mail Merge printing routine.
9. As Joey Moat's report begins to print, note the two screen messages:



```
Change File: PROG REPORT.F                PRINT MENU        Escape: Review/Add/Ch
=======================================<==================================

          Test  1: ^<TEST 1> ^^^^^^^^^^^^^Midterm :^<MT*2>
          Test  2: ^<TEST 2>
          Test  3: ^<TEST 3> ^^^^^^^^^^^^^Test Average To Date : ^<AVERAGE>
          Test  4: ^<TEST 4>

     Teacher Comments :
     ^

Current data base item for mail merge:

Moat  Joey  77  47  68  61  52  104  59.5

            Printing

                  You can type information to be placed
                  at the point marked above.

--------------------------------------------------------------------------
Information?                                                 27K Avail.
```

10. Note that Joey's name, scores, and average is being displayed on the screen. This can be quite helpful when considering what type of comments to include on his Progress Report.
11. Also note that the cursor is available at the bottom of the screen. You can enter a personal comment at this point.

We will take this opportunity to comment on Joey's work.

12. For Information?, enter: Please talk to Joey about these grades, and call.
13. We can only use the space available at the bottom of the screen, so press Return to conclude this comment.

The cursor will immediately move to the next EK caret on the screen, providing more space at the bottom of the screen for entering text.

14. For Information?, enter: me to set up a time when we can meet. If Joey
15. Press Return and enter: doesn't improve he won't be fit to flip hamburgers.
16. When you press the third Return your comments will be sent to the printer.
17. When Joey's report has been completed, press the Space Bar to begin printing Matthew Smith's report.
18. For Matthew and Robin's reports, enter your own comments. Experiment with the number of characters allowed per line. See if you can extend one comment over two EK pauses.
19. When you have received the three progress reports, save this file.

# ACTIVITY 3
# MAIL MERGING AND SAVING TO DISK

The *AppleWorks* Mail Merge also allows us to "print" (we're actually saving) our customized form letters to one text file on the Data Disk. By merging and saving to the Data Disk, we can print all the merged letters when a printer becomes available.

Saving to disk also allows us to examine each letter before it is printed. If necessary we can further personalize a letter before the final printing. *AppleWorks* now provides the best of both Mail Merge worlds: the ability to "print to disk," and, direct merging to the printer.

## PART 1: ADDING FILES TO THE DESKTOP

1. Load *AppleWorks*.
2. Begin at the Main Menu.
3. Add both the PURCHASE LETTER word processor file and COMPUTE PRODUCT database file to the Desktop.

## PART 2: EXAMINING THE DATABASE

The Steelhead School computer coordinator recently attended a computer conference, where he spent a lot of time in the exhibits area. In order to keep track of the products he intends to order for his computer lab, he set up a database containing the product name and description, company address and contact person, and relevant ordering information for many of the computer products that impressed him.

1. From the Desktop Index select the COMPUTE PRODUCT database and become familiar with the various categories.
    a. Zoom in on the first record. Note that this record contains information regarding the name of the product, quantity to be ordered, and additional ordering comments.
    b. Each record also contains a conference notes category for highlighting a memorable event or impression.
    c. Move the cursor to the third record. Orders that have not yet been approved are blank in the PO # category.

## PART 3: SENDING DATABASE RECORDS TO THE CLIPBOARD FOR MAIL MERGE

All letters will be alphabetized by company name. The one order that has not been approved by the building principal will not be included in this first mailing.

1. To sort records so that they are in the order you want the letters printed, use Open-Apple A to alphabetize by company name.
2. Write a record selection rule to send to the Clipboard only those records containing orders that have a purchase order number.
3. Don't worry about changing column widths. All text in each category will be sent to the Clipboard, regardless of column width displayed on the screen.
4. Press Open-Apple C.
5. For copy, select: To Clipboard.
6. Use the Down arrow key to highlight the six records . . . . . . . . . . . . . Press **RETURN.**
7. Although no message was displayed, all information is now on the Clipboard ready to be merged.

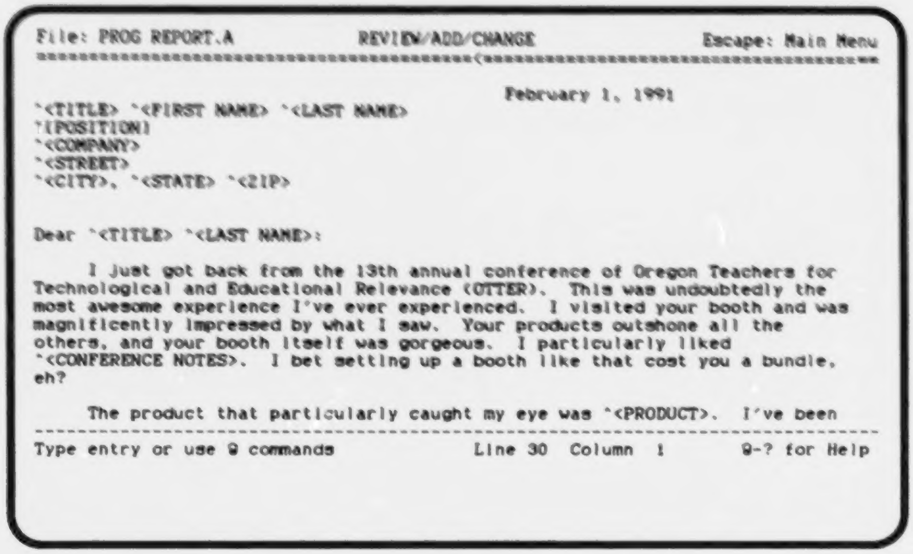
## PART 4: PREPARING A WORD PROCESSOR FILE FOR MERGING

1. Press Open-Apple Q and quickly switch to the word processor file, PURCHASE LETTER.
2. Zoom in to view the following printer commands:
   - Side, Top, and Bottom margins;
   - Characters-per-Inch and Justification settings.
3. Use the Mail Merge option to place the following markers on the left margin, two lines *above* "Dear":

   **^<TITLE>^ <FIRST NAME> ^<LAST NAME>**
   **^[POSITION]**
   **^<COMPANY>**
   **^<STREET>**
   **^<CITY> ^<STATE> ^<ZIP>**

4. Insert a comma and a blank space between **^<CITY>** and **^<STATE>.**
5. After "Dear" insert **^<TITLE> ^<LAST NAME>.** Then enter a colon.
6. Find CONFERENCE NOTES in the text of the letter and substitute **^<CONFERENCE NOTES>.**

7. For every occurrence of PRODUCT substitute **^<PRODUCT>**.
8. For QUANTITY substitute **^<QUANTITY>**.
9. For COMMENT 1 substitute **^<COMMENT>**.
10. For PO# substitute **^<PO #>**.
11. In the fourth paragraph substitute a **^<FIRST NAME>** for FIRST NAME.
12. Read over the form letter, checking carefully for spacing after the Mail Merge markers and overall readability.
13. Your screen should look something like this:



```
File: PROG REPORT.A              REVIEW/ADD/CHANGE              Escape: Main Menu
=========================================(====================================

                                                  February 1, 1991
^<TITLE> ^<FIRST NAME> ^<LAST NAME>
^(POSITION)
^<COMPANY>
^<STREET>
^<CITY>, ^<STATE> ^<ZIP>


Dear ^<TITLE> ^<LAST NAME>:

     I just got back from the 13th annual conference of Oregon Teachers for
Technological and Educational Relevance (OTTER).  This was undoubtedly the
most awesome experience I've ever experienced.  I visited your booth and was
magnificently impressed by what I saw.  Your products outshone all the
others, and your booth itself was gorgeous.  I particularly liked
^<CONFERENCE NOTES>.  I bet setting up a booth like that cost you a bundle,
eh?

     The product that particularly caught my eye was ^<PRODUCT>.  I've been
------------------------------------------------------------------------------
Type entry or use @ commands             Line 30  Column  1       @-? for Help
```

14. Save the file. It could be used as a template for future purchase order cover letters.

## PART 5: PRINTING A MAIL MERGED WORD PROCESSOR FILE TO DISK

In this activity we will *not* merge database information and print our word processed letters directly to the printer. This time we will merge and "print" the personalized letters to a special file on the Data Disk. Once this merged letter file is on a disk, at any time we can add this file to the Desktop, preview the contents for each letter, and then print.

In order to complete this Mail Merge process, we will have *AppleWorks* create a special file containing all the personalized versions of the form letter. This special file is known as an ASCII file (for *American Standard Code for Information Interchange*). This file will *not* contain any of the *AppleWorks* formatting currently displayed in the PURCHASE LETTER file. And since *AppleWorks* will only recognize an ASCII (or DIF) file as an *Other* file, we will have to use pathnames to both save and retrieve it.

1. From the Review/Add/Change screen of the PURCHASE LETTER file, press Open-Apple P.
2. Select: Print from the beginning.
3. For where to print the file, select: 2. A text (ASCII) file on disk.

> **NOTE**: Keep in mind that saving an *AppleWorks* file as an ASCII file will ***strip out*** all the printer options. Any printer codes that were in the original file will be ignored, and only text, spaces, and Return S will remain.

4. To merge database information, select: "Merge database items with this document."

Next we must enter the pathname identifying the disk we are printing to, and the ASCII file we are setting up.

5. For pathname, enter: /DATA/LETTERS .................................. press **RETURN**

> **NOTE**: When creating a pathname:
>
> - Type a slash and the name of the disk (the *volume name*).
> - Type a slash and enter the name of the file you are setting up.
>
> Pathnames may contain uppercase or lowercase letters, numbers, or a period—but no spaces.

6. The disk drive will work for the next few moments, saving a series of merged letters into one ASCII file.
7. Escape to the Main Menu.
8. To see if that file was actually saved, use the Other Activities option to "List all files on your data disk."
9. Note that an ASCII file is referred to as an "Other" file.

10. Also note the size of the DATA/LETTERS! A file of six single-page mail merged letters takes up some space on a disk.

**NOTE**: Merging and saving to disk may require a good deal of disk space. If you run out of room on your disk while in the process of saving, you *must* have a second, formatted disk—with the *same volume name*—available as an immediate replacement.

## PART 6: CREATING A WORD PROCESSOR FILE FROM A TEXT (ASCII) FILE

Now that we have the merged letters saved on disk, we can start an *AppleWorks* word processor document based on the ASCII file.

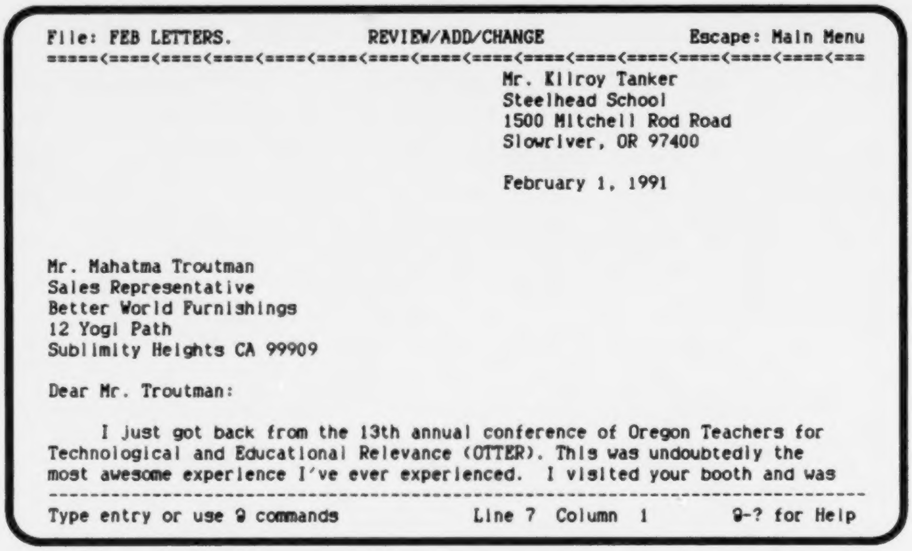
1. Escape to the Main Menu and select: 1. Add files to the Desktop.
2. Select: 3. Word Processor.
3. For Make a New File, select: 2. From a text (ASCII) file.
4. To identify the correct file on the Data Disk, for pathname type: /DATA/LETTERS.
5. To give this new *AppleWorks* word processor file its own name, type: FEB LETTERS.
6. Press Return.
7. Examine the first letter. Zoom in to note where *AppleWorks* placed returns when formatting this ASCII file.

Information in this new file is being displayed with the default *AppleWorks* printer settings: The merged text is wrapping in odd places due to the one-inch right and left margin settings. To adjust this word wrap, we need the same printer settings that were used in the PURCHASE LETTER.

8. Enter the following settings or copy them through the Clipboard from the original form letter, PURCHASE LETTER.

| | |
|---|---|
| Top Margin | .5 inches |
| Bottom Margin | .5 inches |
| Left Margin | .7 inches |
| Right Margin | .7 inches |
| Chars per Inch | 12 chars |
| Justified | |

The formatting should look much better now:



```
File: FEB LETTERS.            REVIEW/ADD/CHANGE               Escape: Main Menu
=====<====<====<====<====<====<====<====<====<====<====<====<====<====<====<===
                                         Mr. Kilroy Tanker
                                         Steelhead School
                                         1500 Mitchell Rod Road
                                         Slowriver, OR 97400

                                         February 1, 1991



Mr. Mahatma Troutman
Sales Representative
Better World Furnishings
12 Yogi Path
Sublimity Heights CA 99909

Dear Mr. Troutman:

     I just got back from the 13th annual conference of Oregon Teachers for
Technological and Educational Relevance (OTTER). This was undoubtedly the
most awesome experience I've ever experienced.  I visited your booth and was
-------------------------------------------------------------------------------
Type entry or use 9 commands              Line 7  Column  1        9-? for Help
```

Because we saved our merged letters to an ASCII file the New Page markers *AppleWorks* would automatically insert during the merge were ignored. These will need to be replaced at the end of each letter.

9. Place a New Page marker (NP) at the end of each letter.
   Hint: Use the Copy command to place the first New Page marker on the Clipboard, then copy it from the Clipboard at the end of each letter.

> **NOTE:** At this point you could next move through the letters, inserting personalized comments as separate sentences or embedded into existing paragraphs. If you found an address that had been missing from the database, it could be entered at this time.

10. After indicating where each new page is to begin, include a sentence in the letter to Better World Furnishings requesting a catalog describing their entire line of computer furniture.
11. To control the number of letters you are about to print, add a Pause Each Page printer command at the beginning of this file.
12. Save this file. Move to a printer station and print the first two letters in this file.

**NOTE**: Merging database information into a word processor document via an ASCII file, has both advantages and limitations:

- This process allows you to view merged data on screen before being printed. Any last-minute editing could be done at this time for one or more letters.
- If a printer is not readily available (e.g., if you're working at home and printing at school), merging and saving letters to a Data Disk could be very helpful.
- Reentering necessary printer options at the top of a file containing many merged letters is a simple task. And placing New Page markers does not take up that much time. However customizing *each letter* with special printer settings (e.g., underlining each occurrence of "just like this . . .") could be very time consuming, and reason enough to merge directly to the printer.
- An ASCII file containing numerous mail merged letters can require a lot of disk space. A 5 1/4-inch floppy disk could fill up very quickly.
- Likewise, 128K memory computers can only handle *AppleWorks* files up to 56K. If you have lots of mail merge correspondence, your ASCII file could quickly exceed available memory.

13. We have now examined three methods for mail merging database information into a word processed form letter:

    1. Method #1: Selecting, arranging, and copying to the Clipboard, database records directly from the Review/Add/Change screen, and printing immediately.
    2. Method #2: Selecting, arranging, and printing to the Clipboard, database records from within a table report that contains calculated categories, and printing immediately.
    3. Method #3: Selecting, arranging, and sending database records to the Clipboard, and "printing" the personalized documents to a special file on a data disk. Printing can then occur at any time.

14. Enjoy your 3.0 *AppleWorks*!

# SUPPLEMENT

Selected
Articles
from...

## AppleWorks FOR EDUCATORS

The
Computing
Teacher

**GENERAL READING**

**WORD PROCESSING**

**SPREADSHEET**

**DATABASE**

# SUPPLEMENT

# GENERAL READING

## AppleWorks 3.0

Claris Corporation, 5201 Patrick Henry Drive, Box 58168, Santa Clara, CA 95052-8168; 408/987-7000.

**Subject:** Integrated software.

**Price:** $249; $79 upgrade for registered owners of AppleWorks 1.x and 2.x and AppleWriter. Site license information: call 800/747-SITE.

**Hardware Required**: Apple IIc, IIc+, IIe, IIGS with 128K; 3.5" disk drive, 80 column card, and expanded RAM recommended.

**Reviewed by:** Neal Strudler, University of Nevada, Las Vegas, NV 89154.

Since its introduction in 1983, *AppleWorks* has set new standards for user-friendly, integrated software for Apple II computers. Version 3.0, Claris Corporation's recently released upgrade, further establishes *AppleWorks* as the unchallenged standard for Apple IIe/c productivity. *AppleWorks* 2.0, the last major upgrade in 1986, added mail merge, a few spreadsheet improvements, and expanded memory support. In contrast, version 3.0 provides significant new features throughout all three *AppleWorks* modules, including a built-in spelling checker, enhanced formatting and printer options, multiple column mailing labels, 26 new spreadsheet functions, and improved integration between modules. Overall, Claris has done an excellent job of increasing the program's power without altering its basic look and feel.

The program, now comes on two double-sided 5.25" disks—a startup side, two program sides, and a dictionary side. For those with access to a 3.5" disk drive, the entire contents fit on one 3.5" disk. This convenience eliminates the periodic disk swapping with which 5.25" users must contend.

The program also takes up more of the Apple's internal memory. The size of the desktop using a standard 128K Apple II has been reduced to 40K, down from 56K. Program disks, however can be customized to fit the startup disk and one application (such as the word processor) on one side of a floppy disk. Thus, people who primarily use one application can avoid swapping disks—a nice convenience.

Of course, those with expanded memory cards produced by Apple or third-party vendors can further avoid disk swapping by loading the entire *AppleWorks* program into RAM, thus limiting the need for disk access. *AppleWorks* 3.0 recognizes and takes advantage of all available RAM without the software "patches" that were previously required with Applied Engineering or Checkmate memory cards. Users with extra memory can configure 3.0 to preload any combination of *AppleWorks*' modules.

### The Word Processor

The addition of a spelling checker is probably the most significant single improvement in version 3.0, especially for use in schools. The word processor now includes an enhanced version of *TimeOut QuickSpell*, the highly acclaimed spell checking program developed by Alan Bird. To invoke that feature, one must press Open Apple-V (for Verify Spelling). *AppleWorks* gives the option to check the entire document, a block of text, or a single word. It compiles the words, checks against the user's custom dictionary, and checks the 90,000-word main dictionary that accompanies the program. The 5.25" version of the dictionary is limited to 68,000 words. Unfortunately, users with expanded memory do not have the option to load the dictionary directly into RAM.

The spelling checker is the best that I've seen for an Apple II. Its suggestions are usually on target and it has the ability to detect double words (e.g., the the). One especially nice feature for schools is the option to generate a spelling summary which includes a list of unrecognized words and the corrections made (Figure 1). The summary can be displayed on the screen or the printer, or it can be copied into another word processor document, such as a cumulative spelling file. This option clearly enhances the spelling checker's value as a teaching and learning tool.

Five new controlkey formatting commands have been added to streamline common operations in the word processor module. Existing single keystroke commands, Ctl-B for bold and Ctl-L for underline, have been expanded to include Ctl-C(enter), Ctl-N(ormal Justification), Ctl-F(ull Justification), Ctl-P(age Break), and a new feature, Ctl-R(ight Justification). Users, of course, still have the option to invoke these commands from the Options menu.

The *AppleWorks* word processor now allows greater flexibility in formatting. True tabs, illustrated by carets on the screen, vastly improve upon previous tab operations. Now users can specify left justified, right justified, decimal, and centered tabs. In addition, users can place multiple rulers in a document, so tab settings can change from paragraph to paragraph. An improved zoom feature (Open Apple-Z) now hides all formatting options when you "zoom out," allowing users a more accurate picture of their final output.

Cursor movement and printer options have also been enhanced. Users can now jump to the beginning and the end of a line using Open Apple commands. When printing, *AppleWorks* now allows specifying a range of pages. Previously, this option was only available by inserting a pause in the document. In addition, multi-line headers and footers are now available.

### Database

While changes in the database are not as pervasive as in the word processor, this component of the program has also been substantially enhanced. One of the shortcomings of the previous version was its inability to display all data fields in the multiple record mode. Users were limited to viewing a maximum of 80 columns on the screen. The remaining fields simply could not be viewed without changing the screen layout. Now, *AppleWorks* has included the ability to scroll horizontally in the multiple record display, much as in the spreadsheet module. The first one or two fields can be frozen on the left side as titles while users scroll through the remaining fields. The ability to scroll horizontally is a major improvement in the database program.

Getting around in the database will now be a bit easier. Open Apple commands enable users to move from one word to another. For those who work with large mailing lists, this feature is a welcome addition. It was one of my favorite enhancements offered by *TimeOut Ultra Macros* that has now been incorporated into the *AppleWorks* program. In addition, users can now easily move from the first to the last field with Open Apple commands.

Options for reports have also been expanded and enhanced. Reports can now be created directly from custom screen layouts, or visa versa. If you've designed your layout on the screen and you want to reproduce it for your printout, you merely need to choose that option when creating the report. *AppleWorks* 3.0 allows a total of 20 report formats.

When printing mailing labels, users now have the option to generate multiple column labels. Just designate the number of columns desired through the printer options menu, adjust the size of the labels, and print. Microsoft *Works*, an integrated program for the Macintosh, would do well to emulate this level of simplicity for generating multiple-column labels. The ability to find and arrange data has also been improved in version 3.0. The database has the ability to arrange data by up to three categories within a single Open Apple-A command. For example, one can now arrange a class list by last name, first name, and age within one operation. In addition, an enhanced Open Apple-F (find) command allows users to search for text throughout the entire database or in a specific category.

**Spreadsheet**

Enhancement in the spreadsheet will especially please math, business, and economics teachers. Twenty-six new functions have been added, including five arithmetic, nine trigonometric, six financial, and six logical functions. Spreadsheet functions now have the ability to reference strings of text. The logical functions can return the words "True" or "False" rather than numbers. Also, conditional statements can return text, a nice improvement. For example, the following function could be used in a grade book to designate those who pass and those who do not: @IF(A5>65,"PASS","NO PASS"). Depending upon the value in cell A5, the function will return "PASS" or "NO PASS", a nice improvement.

# Apple*Works* 3.0 on 5.25-inch Disks

### By Rod Farrell/MCIU/IMS

People that I have spoken with after the release of *AppleWorks 3.0* were concerned with such matters as the necessity of upgrading to the new version or the various uses of the expanded capabilities of the three *AppleWorks* modules. More recent questions have been centered around the use of *AppleWorks 3.0* on 5.25-inch disks.

Initially, *AppleWorks* users did not realize 5.25-inch disks were included in the *AppleWorks 3.0* upgrade. Ideally the 3.5-inch version is the suggested and preferred configuration. But for those with only 5.25-inch disks, the desire to upgrade to the 3.0 version requires the user to create a working startup and working program disk. The 5.25-inch version comes on four disks, but you will experience a lot of disk swapping. (As things change, they remain the same.)

To reduce disk swapping (reduce not eliminate) you will need to customize the disks to match the type of work you do most often. The original 5.25-inch 3.0 version disks include a few files that are not necessary, depending on your hardware configuration, and a few files that are very important to the operation of *AppleWorks*.

The four 5.25-inch disks include the following files:

*Startup/Printers Disk*
  PRODOS
  APLWORKS.SYSTEM
  SEG.00
  SEG.XM
  SEG.AM
  SEG.RM
  SEG.EL
  SEG.PR
  SEG.ER
  SEG.AW
  FAST.COPY
*Program Disk - Word Processor and Data Base*
  SEG.AW
  SEG.WP
  SEG.DB
*Program Disk - Spreadsheet*
  SEG.AW
  SEG.SS
*Dictionaries*
  MAIN.DICTIONARY
  CUST.DICTIONARY

An explanation of the files is necessary to help understand what files to copy for your customized disks. (It is assumed you know how to copy and delete files using the PRODOS systems utility disk or any of the other commercial and public domain utility/copy programs.

The following files are necessary on the startup disk. Without these files the startup would not work:

PRODOS—This file manages and communicates to the computer what to do.

APLWORKS.SYSTEM—This is the main program file and starts *AppleWorks*.

SEG.EL—An important file that supports the routines of the *AppleWorks* program.

SEG.ER—ER or environment record stores the standard settings and printers.

SEG.AW—The Main Menu and desktop interface of *AppleWorks* is included in this file. The routines that manage the modules are included.

SEG.PR contains all the printer information. Before copying files to your disk, configure the mastercopy disk to the standard settings and printer. Once you have done this, the file SEG.ER is updated. With SEG.ER updated to the standard settings and printer, SEG.PR is not needed. You must remember if you desire to change these settings on your working startup disk, you must go back to the master copy disk to make the changes.

FAST.COPY is the copy program included with the PRODOS operating system and is not necessary.

The remaining file to be copied to your customized startup disk is the file that supports the memory management of your computer. Apple IIGS uses the file SEG.RM. Apple IIe and IIc and 128K memory requires SEG.00. Those Apple II configurations using memory cards in slot 3 require SEG.XM and those machines using the auxiliary slot use SEG.AM.

If word processing is the most-used module, you may want to copy the file SEG.WP to the startup disk. There is enough room on the disk. With the above configuration, it is possible to copy any module to the startup disk.

The dictionary is too large and must be on a separate disk. The word processing module SEG file and the dictionary can not be on the same 5.25-inch disk because of size. Actually the dictionary on the 5.25-inch disk is smaller that the 3.5-inch disk dictionary. You are also severely limited in the size of the customized dictionary.

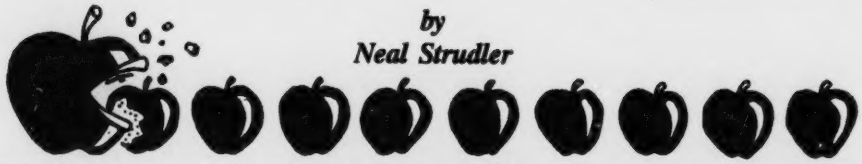
The above is only one way to configure your 5.25-inch disks for *AppleWorks 3.0*. Depending on your work you may desire to alter the files you place on the startup or program disk. If you are using any of the TimeOut series or the UltraMacros you will need to configure your disks differently.

A caution to naming disks when formatting and copying disks: *AppleWorks* uses the disk name /APPLEWORKS. Do not use any other name or it will not work.

*AppleWorks 3.0* can do an excellent job on 5.25-inch disks, but as the user, you must customize your disks to fit your needs.

# Adding Macro-Power to *AppleWorks*

*by*
*Neal Strudler*



While *AppleWorks* has gained much popularity for its power and ease of use, experienced *AppleWorks* users have turned to add-on products to extend the program's capabilities. The models for such commercial programs often trickle down from productivity software designed for the MS DOS-dominated corporate world. Macro capabilities offer a clear example of this trend. Developers of application software such as *Lotus 1-2-3* incorporated macros into their programs and subsequently set new standards for user productivity. During the past year, several programs have been created to add such capabilities to *AppleWorks.*

## Why Use Macros?

Macros are mini computer programs that allow users to reduce any series of keystrokes to a single command. When the user invokes that command, all of the keystrokes that make up the macro are carried out. For example, as I began writing this article (using the *AppleWorks* word processor), I defined a simple macro that types out "*AppleWorks,*" a name that I will frequently use. I defined the macro using Solid Apple-N, and I can now type that key combination to get "*AppleWorks*" to appear in my text. Of course, macros that are considerably more sophisticated and powerful can be defined, too.

Macro capabilities appear to be an especially welcome addition for experienced *AppleWorks* users. While beginning or infrequent users benefit greatly from commands that explain options and prompt the user for responses, experienced users often prefer to streamline processes. For example, in the standard version of *AppleWorks,* if I want to add a file from my data disk onto the desktop, I need to press: Escape, Return (to add files to the desktop), and Return (to confirm the location of the data disk). Then I can choose the desired file from the list that appears. But using a macro program I can simply press one combination of keys, such as Solid Apple-A, to call up a list of files on my data disk.

Macros such as the one illustrated above address a major shortcoming of the *AppleWorks* program. Good software should offer users the flexibility to control the amount of screen prompting involved in certain commands. While beginning users should be able to obtain user-friendly prompts and cautions, experienced users should be able to jump through the layers of the program for greater efficiency and speed. In many instances, however, *AppleWorks* lacks such flexibility. Experienced users must contend with the tedium of prompts and cautions designed for beginning users (e.g., "Are you sure you really want to do this?"). Macro capabilities allow users to eliminate unwanted options from the *AppleWorks* command structure.

In addition to offering users the flexibility to design their own macros, programs such as *SuperMacroworks*, by Beagle Bros., provide arrays of predefined macros. For example, when I typed the heading above ("Why Use Macros?"), I pressed Solid Apple-C to center the text. This macro, built into the program, replaced a five-keystroke sequence. After I typed the title, I used another predefined macro, invoked by Solid Apple-L, to left justify the paragraph after the heading. This replaced another five-keystroke sequence. Later, I pressed Solid Apple-P to print a draft of my text—no questions asked. This macro replaced a four-keystroke sequence.

## Are Macros for Everybody?

Macro capabilities are clearly not necessary for everybody. Infrequent or beginning users do not need to be burdened by more commands. The addition of macros offers a tradeoff: While they add power and flexibility, they also provide one more thing for users to learn (and one more program for users to buy). Most beginning and infrequent users prefer ease of use to saving keystrokes. The unaltered form of *AppleWorks* was designed to meet the needs of such users.

Inexperienced users may find that some macros improve both the ease of use and speed of *AppleWorks.* For example, to perform common text formatting (left and center justification, boldface, underline, etc.), users may prefer invoking some simple macro commands to typing Open Apple-O and selecting from the Printer Options Menu. For such users, it becomes a subjective choice whether the benefits of the macro program are worth the cost. More experienced users will clearly discover more benefits.

In a sense, macros make *AppleWorks* more like programs such as the popular word processor *Wordstar.* This program derives its power from a long list of single-keystroke commands that perform a variety of functions. *Wordstar,* however, is considered by many users to be difficult to learn. In contrast, the *AppleWorks* word processor is considered friendly to new users. Thus, *AppleWorks* with macro capabilities offers the best of both worlds. Macros extend the power of *AppleWorks* while maintaining the program's user friendliness. The original *AppleWorks* command structure is enhanced, not replaced.

## Some Macro Concepts

While macro programs for *AppleWorks* vary in their structure and capabilities, they are all based on similar concepts. It is my intention to discuss a few of these concepts, not to compare and contrast specific features of each program. For a more detailed review of three popular macro programs (*SuperMacroworks, AutoWorks,* and *KeyPlayer*), see "Macro Mania," by C. Van Buren, in *A+ Magazine,* April 1987, pp. 83-88.

Macro programs allow users to construct macros in two ways. One method is to *record* the macro by:

- Turning on the macro recorder;
- Selecting a key (to be used in conjunction with the Solid Apple key);
- Pressing the keystrokes to be carried out; and
- Turning off the macro recorder.

Once defined, the series of keystrokes can be invoked by pressing the designated key combination.

The other way to create a macro file is by using a special macro language that consists of keyboard *tokens*. Tokens are used to represent the keystrokes that make up the macro. For example, ⟨esc⟩ may represent pressing the escape key and ⟨rtn⟩ may represent pressing the return key. Thus, a simple macro that centers text might be composed of the following tokens:

⟨oa-o⟩CN⟨rtn⟩⟨esc⟩

Tokens are entered using the *AppleWorks* word processor module and then compiled with the macro program. This method of creating macros requires attention to syntax, as with any programming language. For this reason, the auto-record approach is far easier to implement. There are, however, special macro functions that can't be simply recorded. For example, in *SuperMacroworks* tokens can be used to call up the current date (stored on the *AppleWorks* startup disk). In addition, tokens must be used in macros that require sophisticated programming features.

Whether macros are recorded or entered through the keyboard using tokens, they can be permanently saved for future use. All macro programs include a means for *patching* or merging the macro software directly onto the *AppleWorks* disk. To add newly created macros to the *AppleWorks* program, the macros must first be compiled. Compilation is the process of converting the recorded or written macros into machine language before the program is executed. This process is similar to the one involved in executing a program in a compiled language, such as Pascal. Macro programs come equipped with a compiler to perform this operation. Then the updated macro file can be patched onto *AppleWorks*.

While many common macros may replace a few keystrokes, more sophisticated macros can consist of hundreds of keystrokes. Further, macro programs can employ many features found in programming languages. Macros can be embedded into other macros, much as programming procedures can be invoked from other procedures. Also, macro programs allow for users to incorporate "if/then/else" logical operators into their macros. Thus, macro creation is open-ended, much like programming in high-level computer languages. While recording a macro is as straightforward as pressing keys on the keyboard, programming with tokens and logical operators allows greater latitude for users to become "*AppleWorks* hackers."

## User-Created Macros: Some Examples

New macro users will probably find that preprogrammed macros included on the macro software streamline most of the bulky *AppleWorks* commands. Eventually, however, you will probably want to create new macros to address your specific needs. The first macro that I created enabled me to remove any file from the desktop in one keystroke —no questions asked. In standard *AppleWorks* this requires an eight-keystroke sequence that I find cumbersome. If the *AppleWorks* program detects any changes in a file since it was saved last, it reminds the user that "you made changes to this file." Unfortunately, when you save a file and then print it, *AppleWorks* recognizes the page-breaks automatically inserted as changes in the file. Therefore it cautions that changes were made, gives the option to "throw out the changes," and asks, "Do you really want to do this?" The macro that I created circumvents this process, but also circumvents the safeguards built into the program. If I invoke this particular macro before saving the file, the changes are lost. Therefore I would not recommend this macro to new users. With the increased speed also comes a greater risk of error. I'm comfortable with this risk, however, and I use this macro often.

I created another series of macros to expedite formatting my doctoral dissertation. When writing the text, I used a macro to indent blocks of direct quotations and to change from double to single spacing. Then I created a second macro to return to the standard margin setting and double spacing. Once the macros were created and working properly, I found that invoking them both simplified my tasks and reduced the human error that results from frequent typing of repetitive commands.

After completing the document, I found that the indented blocks were all one-10th of an inch off the Graduate School's format requirements. To remedy this, I created a macro that searched for the print option "left margin" and alternately ignored the first occurrence (the unindented text was formatted correctly) and changed the value of the second occurrence (i.e., deleted LM=2.0 and inserted LM=1.9). This macro allowed me to adjust the numerous indented blocks in the 240-page document in a fraction of the time that it would have otherwise taken.

Also, I used full justification throughout the document and later decided to change it to left justification. Typically, this change would require changing the printer option only at the top of the document. But since many titles and subtitles were centered, the justify command, which was used to turn off the centering, was placed throughout the document. Therefore, I created a macro to find the justify commands, delete them, and replace them with unjustify commands. Again, this macro expedited what could have been a tedious process.

## Templates: A Real Timesaver

My favorite macro is one that most people would appreciate. This macro uses three submacros to create a template for a standard business letter. It starts by changing the left margin to 4.5 inches, then it calls a macro that types my address. Next a predefined macro (from *SuperMacroworks*) pulls the current date (stored on the program disk when it is booted). The left margin is then restored to one inch and the greeting is written (Dear ,). Next, several spaces are skipped, the margin is changed to 4.5 inches, and a closing is entered (Sincerely,). Finally, three more spaces are skipped, a submacro types my name, and the cursor is moved up to the greeting, where I am ready to proceed with the letter.

This macro saves approximately 125 keystrokes on each occasion that it's used. For me, this is really satisfying. After all the years I've spent writing computer programs that solve make-believe problems, here's a simple application that actually makes my life a bit easier. While the particular form may not suit your needs, the concept probably does.

If you find yourself performing repetitive operations or if you wish to expedite some of *AppleWorks*' commands, you will probably benefit from macro capabilities. Macro programs offer the flexibility to ensure that *AppleWorks*' capabilities will continue to grow with its expanding base of experienced users.

---

*[Neal Strudler, Associate Editor, ICCE, University of Oregon, 1787 Agate St., Eugene, OR 97403.]*

*[Reprinted with permission from "Extending the Human Mind: Computers in Education" Summer Conference Proceedings—'87. Published by the Center for Advanced Technology in Education.]*

## Software

*SuperMacroWorks:* Beagle Bros., 3990 Old Town Ave., San Diego, CA 92110; ph. 619/296-6400. $49.95. (Beagle Bros. has released an enhanced macro program, *Timeout UltraMacros*, that was not available for examination when this article was written.)

*AutoWorks:* The Software Touch, 9625 Black Mountain Road #204, San Diego, CA 92126; ph. 619/549-3091. $49.95.

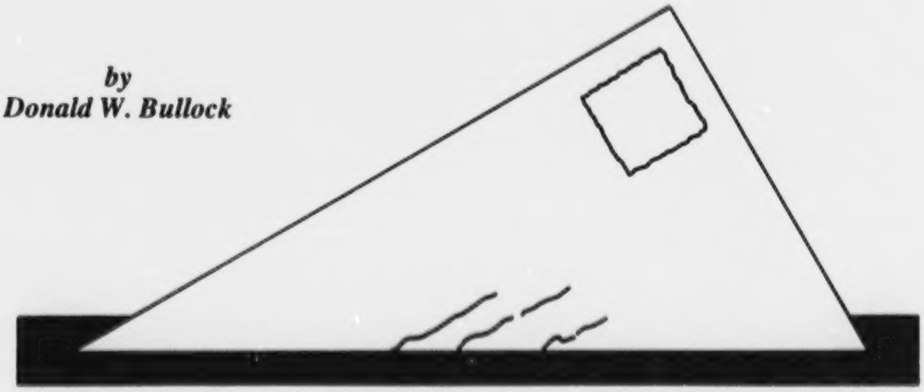
*Keyplayer:* Pinpoint, 5901 Christie Ave. #501, Emeryville, CA 94608; ph. 415/654-3050. $49.

# SUPPLEMENT

# WORD PROCESSING

# Word Processing for Teachers: Professional Results

*by*
*Donald W. Bullock*



Much of what we do in teaching requires writing. Classroom happenings must be explained to students, parents, and administrators. Letters need to be written. Student worksheets and tests have to be created. Signs must be hung in the classroom. In the last few years I have found that word processing software, including print utilities and desktop publishing programs, is an invaluable method for producing these communications professionally with little additional time and effort. In fact, communications happen now that never happened before I started using a word processor.

**Parent Letters**

Throughout my teaching career, I have wanted to keep parents informed about what was happening at school, but didn't have the time. Word processing offers a partial solution to this problem. With a word processor at my desk I have found that writing is much more convenient and the quality of the final product is much improved. A word processor allows me to edit my work. My spelling and typographical errors, of which there are many, are checked by a spelling checker. Whole letters or parts of letters can be stored for later use.

Writing individual letters to parents during the school day can be very frustrating. Often I receive a note from a parent in regard to a problem a student may be having in school, or a student behaves in such a way in class that I feel I must write the parent a letter. Writing these letters by hand requires a minimum of a half an hour. I compose the letter in my mind, write a rough draft, and hope that I don't make a mistake while writing the final draft on my stationery. Usually I need to check the dictionary for spelling assistance several times in the process. After I am satisfied with the final draft I try to remember to take the letter to the copy machine in the office during recess or lunch so that I can have a copy of what I wrote.

Word processing has changed the way I write individual letters to parents. I compose a rough draft on the screen as soon as possible. It is left there while I take care of my other teaching duties. When I return to the computer I read what I have written and make any necessary changes. Once the letter is in its final form I check it with my spelling checker, which takes only a few minutes, and print it. I save a copy of the letter on disk in case a student loses the letter, or I want to use the same form for another student. Not only does this process take less time, the final product looks much more professional.

Writing letters to all the parents of students in my class was always difficult for me. The letters seemed to be unprofessional. First of all, some students were not living with their parents, so letters addressed to "Dear Parents" did not fit their situation. I also found that many parents object to the use of phrases such as "he/she" and "him/her" in letters. Some parents returned the letters with the pronoun that didn't fit their child boldly crossed out or the correct one circled several times. They made sure that their objection to the use of these phrases was made clear. I agreed with them, but until I had a computer I was unable to correct the problem.

**Personalized Form Letters**

It is now very easy for anyone to create individualized form letters. By far the best process for individualizing parent letters involves the use of a data file program which merges with a word processor. I started using *PFS:Write* and *PFS:File* as part of an individual educational grant from Radio Shack. Letters are composed using *PFS:Write*. Parent names, addresses, student names, and even individual comments on students are stored in *PFS:File*. The program can store words, numbers, phrases, sentences, and entire paragraphs. When the letters are printed the information from the file is automatically inserted into the letters. The results are very impressive and professional. *AppleWorks* 2.0 and Microsoft *Works* can print letters with similar results using the Mail Merge option.

One of the teachers at my school has stated for years that she hates form letters. I showed her one of the form letters created using this method without telling her how it was created. She thought the letter was "beautiful."

She couldn't believe it was a form letter.

Parent reactions have been even better. A parent of one of my wife's students reported that the letter she received was so good that she cried when she read it. Many parents have taken the time to write a note thanking me for a letter.

### Worksheets, Newsletters, Awards, and More

Word processors can do more than ease the creation of letters. I don't even want to know the number of hours that I have spent typing ditto masters, sitting at my typewriter with X-ACTO knife and scraps of ditto master in my hand to correct the mistakes. By the end of the session my hands, clothes, desk, and typewriter were covered with a purple haze. I can even remember retyping the same ditto more than once because the first one faded to the point that its printing was unreadable.

Now my ditto masters are created using a word processor. My masters create much better dittos too. With the availability of word processors with fancy fonts, like *MultiScribe* for the Apple II, and programs with graphics capabilities such as *The Print Shop*, *The Newsroom*, and *Certificate Maker*, I can produce worksheets that are more interesting. The combined use of these programs can produce excellent results, and students seem to be more motivated by them.

I have especially found *MultiScribe* to be beneficial in producing worksheets for the classroom. The variety of font styles, forms, and sizes is excellent for this purpose. Students respond well to these professional looking, teacher generated worksheets. They appreciate my efforts to make their work more interesting.

Graphic word processing and desktop publishing programs offer an easy way to improve the appearance of any form of communication. They often have a large collection of pictures to choose from. Many allow pictures to be edited or new ones to be created. These programs usually print words using a variety of fancy fonts. Some allow word processing to be combined with pictures. I have found the use of these programs to be very effective for class news and general announcements. The latest version of *MultiScribe* allows pictures from the Picture Manager to be inserted within a word processed document.

I have had good results using *The Newsroom* for communications to parents. Several times a year I let parents know what is happening through a classroom newsletter created with *The Newsroom*. It was a little shocking to find that even some of my toughest sixth graders took the newsletter home.

*The Print Shop* has become an important tool for many teachers. I have used every function of *The Print Shop* for my classroom. I send thank you notes created with the Greeting Card function. The Sign function creates signs for the classroom, covers for work books, and awards to be given for good behavior or academic performance. My stationery was created using the Letterhead function. Banners, created by the Banner function of the program, provide informative interest spots in my room and titles for bulletin boards. Ideas for the use of *The Print Shop* seem to be endless. I now have enough graphics, fonts, and boarders to keep everything looking different. The program supplements my use of word processing to communicate more effectively.

A more recent program in my library of communication software is *Certificate Maker*. This program comes with several fancy fonts, borders, and hundreds of certificate designs. The type of border and font are selected separately from the certificate design. Many different combinations are possible. Text, including recipient names and information for the certificate is supplied by the user of the program. Names can even be saved in a file for later use. I have my entire class roster stored in a file. When I decide to give out some awards I design the certificate and simply mark the names of the students who will receive the certificate. The program does the rest.

### Positive Results

A computer can improve communication and the quality of teacher generated student materials. Because it is easy to use, a computer increases the frequency of communication and teacher creativity. A teacher, like anyone else, writes and creates when it is convenient. With a computer placed next to my desk at school and one in my office at home, writing and creating has become much more convenient. I communicate more often with parents; more importantly, I send home more positive communications than negative. My creative output in the form of tests and student worksheets has also improved dramatically.

It takes some time to learn how to use computer software and hardware. Classes offered by school districts and local colleges and universities are great places to get training that is directed toward educators. Don't expect to do wondrous things at first; it takes effort to do more than the ordinary. But in the end you will look more professional in the eyes of your students, parents, teaching colleagues, and administrators. You may find, as I have, that you also feel better about yourself.

---

*[Donald W. Bullock, 2805 Wanda Ave., Simi Valley, CA 93065.]*

### Software

*AppleWorks*, Claris Corporation, 440 Clyde Ave., Mountain View, CA 94043.

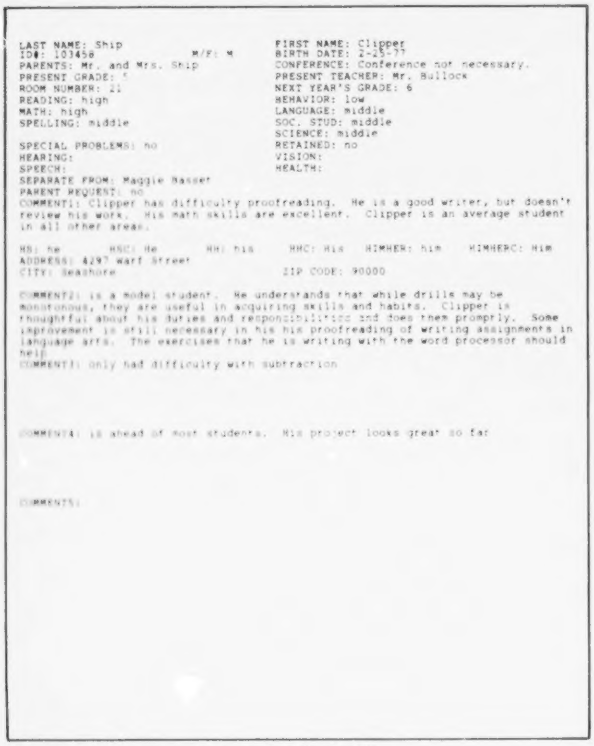
*Certificate Maker*, *The Newsroom*, Springboard Software, 7808 Creekridge Circle, Minneapolis, MN 55435.

*MultiScribe*, Styleware, 5250 Gulfton, Suite 2E, Houston, TX 77081.

*PFS:Write*; *PFS:File*, Scholastic, Inc., 730 Broadway, New York, NY 10003.

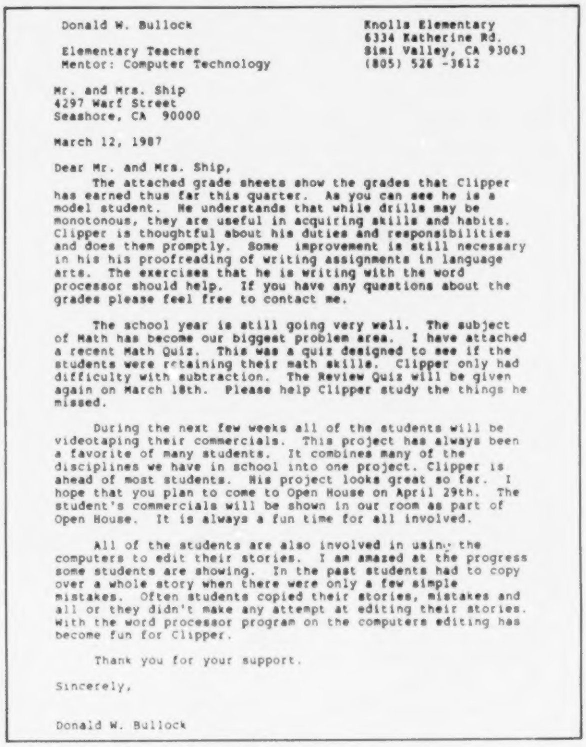
*The Print Shop*, Broderbund Software, 17 Paul Dr., San Rafael, CA 94903.

*Works*, Microsoft Corporation, P.O. Box 97017, Redmond, WA 98073-9717.



```
LAST NAME: Ship                     FIRST NAME: Clipper
ID#: 103458            M/F: M       BIRTH DATE: 2-25-77
PARENTS: Mr. and Mrs. Ship          CONFERENCE: Conference not necessary.
PRESENT GRADE: 5                    PRESENT TEACHER: Mr. Bullock
ROOM NUMBER: 21                     NEXT YEAR'S GRADE: 6
READING: high                       BEHAVIOR: low
MATH: high                          LANGUAGE: middle
SPELLING: middle                    SOC. STUD: middle
                                    SCIENCE: middle
SPECIAL PROBLEMS: no                RETAINED: no
HEARING:                            VISION:
SPEECH:                             HEALTH:
SEPARATE FROM: Maggie Basset
PARENT REQUEST: no
COMMENT1: Clipper has difficulty proofreading.  He is a good writer, but doesn't
review his work.  His math skills are excellent.  Clipper is an average student
in all other areas.

HS: he       HSC: He       HH: his     HHC: His   HIMHER: him    HIMHERC: Him
ADDRESS: 4297 Warf Street
CITY: Seashore                         ZIP CODE: 90000

COMMENT2: is a model student.  He understands that while drills may be
monotonous, they are useful in acquiring skills and habits.  Clipper is
thoughtful about his duties and responsibilities and does them promptly.  Some
improvement is still necessary in his his proofreading of writing assignments in
language arts.  The exercises that he is writing with the word processor should
help
COMMENT3: only had difficulty with subtraction



COMMENT4: is ahead of most students.  His project looks great so far



COMMENT5:
```

Sample student record created with *pfs:file*.



Donald W. Bullock

Elementary Teacher
Mentor: Computer Technology

Knolls Elementary
6334 Katherine Rd.
Simi Valley, CA 93063
(805) 526 -3612

Mr. and Mrs. Ship
4297 Warf Street
Seashore, CA  90000

March 12, 1987

Dear Mr. and Mrs. Ship,

The attached grade sheets show the grades that Clipper has earned thus far this quarter. As you can see he is a model student. He understands that while drills may be monotonous, they are useful in acquiring skills and habits. Clipper is thoughtful about his duties and responsibilities and does them promptly. Some improvement is still necessary in his his proofreading of writing assignments in language arts. The exercises that he is writing with the word processor should help. If you have any questions about the grades please feel free to contact me.

The school year is still going very well. The subject of Math has become our biggest problem area. I have attached a recent Math Quiz. This was a quiz designed to see if the students were retaining their math skills. Clipper only had difficulty with subtraction. The Review Quiz will be given again on March 18th. Please help Clipper study the things he missed.

During the next few weeks all of the students will be videotaping their commercials. This project has always been a favorite of many students. It combines many of the disciplines we have in school into one project. Clipper is ahead of most students. His project looks great so far. I hope that you plan to come to Open House on April 29th. The student's commercials will be shown in our room as part of Open House. It is always a fun time for all involved.

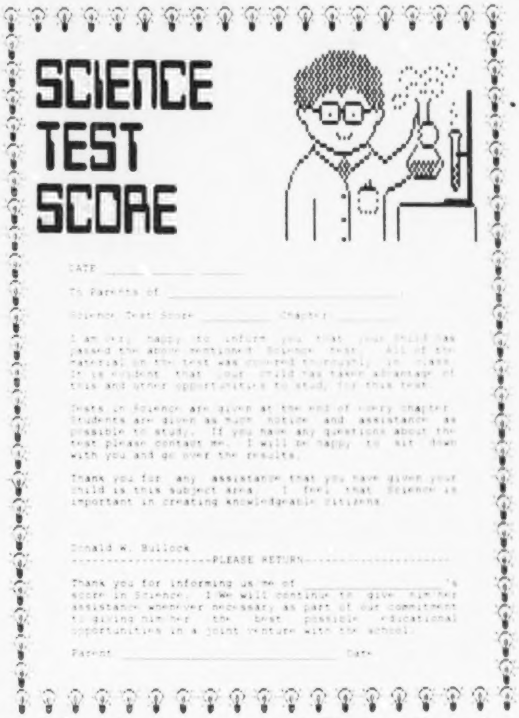
All of the students are also involved in using the computers to edit their stories. I am amazed at the progress some students are showing. In the past students had to copy over a whole story when there were only a few simple mistakes. Often students copied their stories, mistakes and all or they didn't make any attempt at editing their stories. With the word processor program on the computers editing has become fun for Clipper.

Thank you for your support.

Sincerely,

Donald W. Bullock

Sample form letter after merging.



SCIENCE TEST SCORE

DATE ______ ______ ______

To Parents of ______________________

Science Test Score __________ Chapter __________

I am very happy to inform you that your child has passed the above mentioned Science test. All of the material on the test was covered thoroughly in class. It is evident that your child has taken advantage of this and other opportunities to study for this test.

Tests in Science are given at the end of every chapter. Students are given as much notice and assistance as possible to study. If you have any questions about the test please contact me. I will be happy to sit down with you and go over the results.

Thank you for any assistance that you have given your child is this subject area. I feel that Science is important in creating knowledgeable citizens.

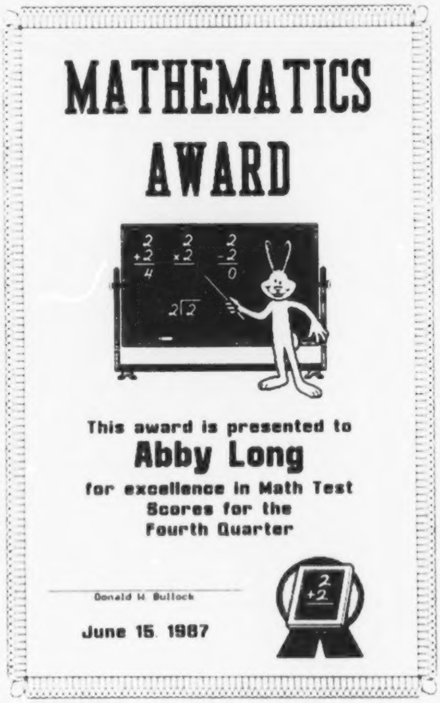
Donald W. Bullock

---------------------PLEASE RETURN---------------------

Thank you for informing us/me of ______________'s score in Science. I/We will continue to give him/her assistance whenever necessary as part of our commitment to giving him/her the best possible educational opportunities in a joint venture with the school.

Parent ______________________ Date

Parent information sheet created with *The Print Shop* and a word processor.



MATHEMATICS AWARD

This award is presented to

**Abby Long**

for excellence in Math Test Scores for the Fourth Quarter

Donald W. Bullock

June 15, 1987

Certificate created with *Certificate Maker*.

# COMPUTERS AND THE LANGUAGE ARTS

*Lynne Anderson-Inman*

## Writing with Word Processors for Remedial Students

*by*
*Susan B. Neuman and Catherine Cobb-Morocco*

Student: I don't know what to write about. I hate school.
Teacher: Why don't you write about why you hate school?
Slowly the student writes: The reason I do not like school is because when I have to get to school early at 8:45 and get out at 2:45.
Teacher: Why don't you like that?
Student: I don't know. I just don't like school.
Teacher: You must have a reason for not liking school. What's tough about getting to school early?
Student: I have to wake up at 5:00 or 4:00.
Teacher: Then tell me, "I have to wake up at. . . ."
The student writes, "I have to get up at 4:00 or 5:30." That's all I want to write Mrs. F because that's all I can think of.

This dialogue illustrates the way many remedial students approach the writing process. They tend to regard writing as an unpleasant chore, a task to be completed as quickly as possible or not done at all. For remedial students who spend many hours per week in tutorial or resource room settings working on their reading and writing skills, the "out of ideas feeling" comes frequently (Johnston & Allington, 1985). By the time they reach fourth and fifth grade, most of these students are convinced they lack the ability to write and in many cases believe they have nothing to say.

An increasing number of teachers and researchers are exploring the use of word processors as writing tools for students with poor writing skills (Behrman, 1984; Daiute, 1985). The hope is that the computer will be a more engaging tool than the pencil, that it will cramp the hand less than conventional writing tools and make revision easier. Presumably, if students are more willing to write and are able to write and revise more easily, the overall quality of their written products will improve.

To learn more about how resource room teachers use word processing to improve the writing skills of remedial students, we have been conducting a two-year study of five elementary-level resource room teachers. Through observations and interviews, we have gathered data on the instructional interactions of these teachers with 14 remedial students: seven boys and seven girls. The students are from diverse socioeconomic and ethnic backgrounds and bring to the resource room varying degrees of difficulty with the writing process.

Analysis of the results from the first year of this study led to four conclusions about effective writing instruction for remedial students using the computer. These four conclusions are shared below, illustrated with examples and dialogue from participating classrooms.

### 1. Initial keyboarding and word processing skills should be taught separately from writing instruction.

Students need training in computer usage and word processing before being able to use the technology as a tool to write. The teachers in our study found this to be true in two areas. First, the students had to be familiar with the keyboard. Although it was not necessary that students learn to touch type, their skills in keyboarding needed to be sufficiently refined so that they no longer had to hunt and peck for letters—only peck. Five minutes of practice, two days a week using *Stickybear Type* helped students increase their typing speed to a rate more commensurate with the flow of their ideas (Neuman and Morocco, 1987). Second, the students needed some initial skills in word processing, such as use of the delete, insert, save, and print functions. Without these initial skills, attention tended to be drawn away from the writing task to matters related to the machine. Here is one example.

Teacher: Last session you wrote about the foods you like to eat. I'd like you to finish that today.
Kurt: I don't have to type this, do I?
Teacher: Yes, you do.
Kurt: This is going to take me years to do it. Can anyone type this for me?
Teacher: No. You can type it for you.
Kurt types "I cook turkey."
Kurt: I'm through. Absolutely, totally.
Teacher: Now you have to go to the transfer menu.
Kurt: Oh, man.

We found that in settings where students had been given separate practice sessions to familiarize them with the keyboard, keyboarding fluency developed much more quickly than it did for students whose skills were simply allowed to evolve. Although some students were able to acquire keyboarding facility in the latter context, most were not. A few students who were still unable to locate keys quickly after several months evidenced some computer phobia—an extreme reluctance to write on the computer. One student would angrily call the computer "Stupid!" possibly attempting to project his own feelings of inadequacy onto the computer.

Word processing is not easy for elementary-level remedial students. It involves a number of operations that at first do not appear to make sense. For example, the delete function is difficult because it requires a student to position the cursor one letter beyond the actual letter he or she is trying to erase. Other functions, such as saving text, need to be taught explicitly so that students will develop confidence in their use of the machine. For instance, forgetting to save a file led one student to say: "I'm writing on the papers because I have to. . . . I put my things on that computer that day . . . I'm never going to touch that again."

The teacher's role as helper and troubleshooter is critical during this early stage. His or her ability to help students with some of the mechanics of word processing will allow young writers to continue to focus on the writing task. For example, when students become discouraged with the new writing tool, the sensitive teacher can help the writer perform the desired function, then acknowledge that the first stages of learning to write with a new tool are the most difficult.

### 2. Students should be taught strategies for generating and organizing their *own* ideas.

The most effective teachers in our study did not tell children what to write. Instead, they provided students with a context for discussion and helpful procedures or "hooks" for getting them started in the writing process. These procedures included both conversational approaches and cognitive strategies. Conversational approaches included such activities as joint brainstorming, having the student tell a story, or encouraging the student to recall personal experiences. Cognitive strategies provided students with new ways to gather and organize information. For example, when one student had difficulty describing the tea room in a story, "Tea at the Ritz," the teacher suggested that she draw a map of the room, showing what people would see as they walked in. The student then placed the map beside her at the computer and was able to compose the description.

The word processor was of assistance to remedial students in generating their own ideas for writing in several ways. For example, the computer encouraged students to take risks as they began to write. Because beginning attempts could be easily erased as the students thought of additional ideas, there was less hesitancy in getting started. In addition, use of word processing meant that students often began to compose sooner than before, i.e., prewriting and first draft attempts often merged during the writing sessions.

The teachers also developed a number of creative techniques to facilitate student planning on the computer, techniques which led to ideas for further writing. Using the computer for brainstorming was one of these techniques. In the following example the student was asked to brainstorm on the computer by writing whatever words came to mind. He slowly wrote two complete sentences, then apparently ran out of ideas.

Teacher: When you get stuck, just write "blank." The thing is, you can't stop writing.
Student: Yea, but I don't have nothing else to write about.
Teacher: Then you know what to do? (Stands over him and types "blank.") Tell me a word that you're thinking of in your head, any word.
Student: Autobiograpies (Teacher types this.)
Teacher: What does that make you think of?
Student: Working (Teacher types this.)
Teacher: Another word.
Student: Unnormal powers (When the student sees these words on the monitor, he comments:) I wish I could have unnormal powers.
Teacher: When you write, you can.

After several more minutes of discussion on "unnormal powers," the notes were printed out. On the next day, the student used these notes as the basis for writing about his own "unnormal powers."

The resource room teachers in this study found that there was a public quality about the computer's screen. Students' early ideas were accessible for teachers and other students to discuss because the writing was legible and available for all to see. The monitor also functioned as a neutral ground where students and teachers could brainstorm together, the resulting words and phrases all appearing as one activity. In addition, the teachers felt it was easier to interact with students about their writing when they were at the computer. The teachers were drawn to talking with the students as they wrote and provided encouragement to keep students thinking. Reading and rereading text on the screen became a primary way of maintaining the students' engagement in writing. It also enabled the teacher to praise the content of the text and to encourage expansion.

### 3. Students' attention should first be focused on composing their ideas, not editing their text.

Remedial students tend to be anxious about spelling and mechanics. They are often concerned about "saying it right." Unfortunately, paying so much attention to the mechanics of writing often makes it difficult for students to pay attention to what they want to say. The mechanical issues tend to draw these students away from what should be their major focus: generating and writing ideas. Here is a typical example:

Student: How do you spell "reason"?
Teacher: Think. REASON.
Student: R-E-A-S-O-N?
Teacher: Good.
Student: I don't know what to write now.

The teachers who acknowledged spelling concerns but handled them quickly (usually by encouraging the students to use invented spelling) helped students maintain a high level of involvement in writing. This is not to suggest that these teachers ignored spelling accuracy. Rather, they assured students that spelling would be attended to at a later time. When students had completed their compositions, spelling checkers (*Bank Street Speller*, 1984) were used to help correct their work. In addition, students were encouraged to develop personal word files of frequently misspelled words to be used for later reference and study.

Too much emphasis on revision can also have negative effects on content. The word processor, with all its flexibility, makes editing and revising text particularly attractive. In fact, it may make the revision process too attractive. Our observations indicated that many students would begin to revise and edit their writing too early. This was unfortunate because it led some students to write short, technically correct pieces of writing which lacked spontaneity. For other students, the word processor's capacity for easy deletion resulted in a pattern of constantly generating and then erasing text.

Observations revealed that it was most effective for editing to be approached in two steps. After students had written their stories, they printed draft versions. The teachers and students then conferenced together, making corrections on their printed drafts. Following the conferences, students returned to the word processor to edit and publish final copies. In this way, mechanics and spelling issues were held in abeyance until students' ideas had been written down.

For example, an area in which this two-step approach to editing was found to be extremely helpful was in the teaching of sequencing. Remedial students often have difficulty sequencing their ideas into a logical order. Use of the move procedure on the word processor provided these teachers and students with a new remedial technique for this area of difficulty. First, students were encouraged to write down their ideas as the thoughts came to mind. While conferencing, the teacher would help each student specify which activities came first, second, third, etc. Students were then encouraged to organize the text sequentially by rearranging the sentences using the "move" procedure.

### 4. Students can be helped to manage their writing anxiety and lack of confidence.

The teachers who praised students' writing, verifying their role as authors, created a positive writing environment for those who might otherwise be anxious and insecure. Comments such as, "That's so interesting" and "She is such a writer!" reflected the teachers' opinions that their students were capable of generating good writing. Students' willingness to engage in writing was very closely tied to having a warm and nonjudgmental person who responded with genuine interest to their ideas. This attitude enabled the students to feel that they had something of value to communicate to others.

This sense of achievement was also fostered by activities that allowed the students to "become like writers" (Smith, 1983). In one class, for example, the students each published a book of stories. These books were final versions of stories written on the computer. In addition to the stories, each book included an autobiography, a dedication, and a table of contents. The computer-written stories from another resource room were proudly hung on the bulletin board in the students' regular classroom. The word processor allowed students to produce work that was more professional looking and therefore more valued. One student, who was just beginning to feel successful as a writer, cheerfully exclaimed, "I wrote a great story. It is 57 lines long." While we know that sheer productivity does not indicate good writing, these comments reflect the student's positive attitude toward the writing task.

### Conclusions

This column has described four major guidelines for helping remedial students learn to write with word processors. Our observations indicate that effective teachers were those who explicitly taught basic word processing and keyboarding skills, gave students strategies for generating their own ideas, encouraged students to focus their attention on composing rather than editing, and helped students manage their anxiety by encouraging and praising their ideas.

The word processor was used as a significant instructional resource by the five resource room teachers we observed. It allowed them to provide new opportunities for writing and to teach new strategies for revision. But the word processor's features alone did not facilitate improved writing. Rather, it was the teacher's approach that fostered effective use of the computer. Teachers who brought a working knowledge of the writing process to the instruction of their remedial students used the unique features of the word processor to enhance student learning and extend their repertoire of good writing skills.

---

*[Susan B. Neuman, College of Education, University of Lowell, One University Ave., Lowell, MA 01854; and Catherine Cobb-Morocco, Education Development Center, 55 Chapel St., Newton, MA 02160.]*

### References

Behrman, M. (1984). *Handbook of Microcomputers in Special Education.* San Diego: College Hill Press.

Daiute, C. (1985). *Writing and Computers.* Reading, MA: Addison-Wesley Publishing Co.

Johnston, P. & Allington, R. (1985). "The Congruence of Classroom and Remedial Reading Instruction." *The Elementary School Journal,* 85(4), pp. 465-477.

Neuman, S. and Morocco, C. (1987). "Two Hands is Hard for Me": *Keyboarding and Learning Disabled Children* (at press).

Smith, F. (1983). "Reading Like a Writer." *Language Arts, 60*(5), pp. 558-67.

The Computing Teacher, Volume 14, Number 9

## COMPUTERS AND THE LANGUAGE ARTS

**Edited by Lynne Anderson-Inman**

# Learning to Write with a New Tool: Young Children and Word Processing

*by*
*Jessica Kahn*

For two years I have been observing young emergent writers as they learn to use word processing in the context of a process approach to writing instruction. My purpose has been to document some of the ways in which word processing influences their newly developing writing practices. What follows are some observations on the word processing experiences of second and third grade students learning to write in classrooms using different interpretations of process writing.

Developmentally, this age is fascinating, for seven- and eight-year-olds have started to shed the egocentrism and confidence of first graders (Calkins, 1986). They are beginning to look outside themselves for evaluation, less certain of their own perfection. This can be used to advantage by a skilled writing teacher, making second and third grade an appropriate time for children to begin conferencing with each other about their writing. Conferencing helps seven- and eight-year-olds evaluate their writing from a reader's perspective, making it easier to see where revisions might be necessary. As children learn about drafting and revising their drafts, they begin to form a concept of writing for an audience.

Children, however, are hampered in their writing by the difficulties of transferring thought to paper. These difficulties have more to do with small motor coordination and the permanence of pencil marks on paper than with the ability to compose a meaningful sentence. In other words, at this stage in their development children are burdened simultaneously by mechanical and compositional concerns during the writing process. For this reason it is particularly helpful to understand how the computer fits into emergent writers' practices. How do young children feel about writing with a computer as opposed to writing with pencil and paper? How does writing with a computer influence their emerging skills or their attitudes toward the writing process?

For the last two years I have been involved in an ethnographic study of teachers and children learning to write with word processing. Since the research is based on the assumption that the context in which writing occurs shapes the ways in which writing is practiced, a brief description of the two different classrooms follows.

The teacher of the second grade classroom chose to primarily use computers with her language arts group, which meets for an hour and a half each morning. In addition to three district-mandated writing assignments, the second grade teacher asks her students to write pieces every week, usually on topics drawn from their reading assignments. After students write their first drafts (either in their journals or on the computer) the teacher checks them for usage, spelling and punctuation and then the children correct their drafts. The children who work at the computer sometimes do their corrections on the word processor and then print their finished pieces. The children who do their drafting in journals either recopy their pieces with pencil and paper or type their corrected drafts into the computer so that the stories can be made into books.

Although similarly constrained by district-mandated writing projects, the third grade teacher has adopted a structure somewhat more compatible with process writing for her language arts group. She sometimes allows the children to choose their own writing topics and has taken a great deal of class time to teach the steps of the writing process directly. For example, when the children are expected to write an opinion paper, she teaches prewriting by providing them with a ditto on which they can jot down their ideas—pros on one side, cons on the other and conclusions at the bottom. Most writing projects in this class take several weeks to complete. During this time each child reads his/her piece to another child, and the teacher conferences with each student, pointing out problems in mechanics and expression. As skills improve the children are expected to seek out an "editing expert" in the class for help with mechanics, and as the year progresses, the teacher increasingly expects the children to take charge of their writing.

These two classrooms are described in some detail in order to place children's experiences writing with word processors within the context of a larger writing curriculum, reflecting individual teacher expectations. Understanding the dissimilarities between the two classrooms makes the similarities in the children's word processing experiences more striking, and helps to account for some of the differences in their behavior and attitudes.

Observations of students in these two classrooms revealed some interesting commonalities in the ways in which word processing was incorporated into the writing process. All of the children seemed to think that word processing was easier than writing with pencil and paper. Furthermore, they reported that pressing keys was more fun because, in the words of a second grader, "It doesn't hurt my hand." The children seemed to write for longer periods of time at the computer, and they knew that they were doing so. The pieces written at the computer were longer and possessed fewer of the gaps in meaning which often characterize children's writing. Students at both grade levels said they never wrote such long pieces with paper and pencil because, as one child said, "It wears me out."

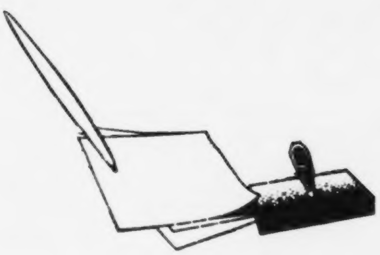
In addition, the children accepted the idea of making changes more readily when word processing. Once the students realized that they did not have to do battle with an eraser, they were quick to ask, "What else needs to be fixed?" The third graders learned to use the spelling checker incorporated into *Bank Street Writer III*, and they loved it. The spelling checker highlights any word which does not appear in its dictionary and offers a list of alternate spellings. The children were good at recognizing the correct spelling if it appeared on the list, and thanked the computer when it replaced the misspelled word with the correct one.

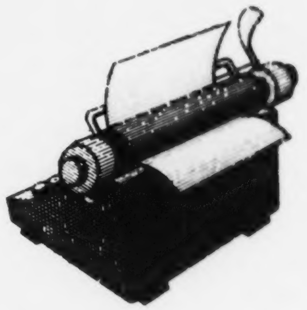
Students in both grades loved the printouts. They seemed to care a great deal about the appearance of their written work, and judging from their use of the spelling checker, cared a great deal about correct spelling. Their satisfaction with the printouts and their willingness to return to the computer when another child noticed a mistake suggest that the students valued perfection and were striving toward that goal in their writing. Perhaps the children did not strive for the same perfection when writing with pencil and paper because it was so difficult to achieve. Word processing became a tool that made it easier to get things right.

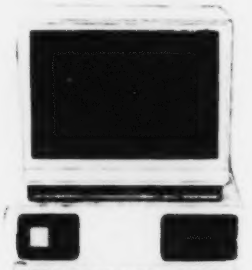
Although both the second and third graders in this study found that word processing helped them to write for longer periods of time, write longer pieces, and take more interest in revising and correcting those pieces, there were also differences in the ways in which the two groups used word processing. The second graders were less interested in the word processing system, grateful for what it enabled but not extensively curious about extra keys and additional features. It was sufficient for them to be able to get their writing done. In the second grade the children generally wrote a piece during one sitting at the computer, and so had little need for saving or retrieving what they had written. It was not surprising, therefore, that they seemed vague about the purpose of saving and retrieving their compositions. They all, however, remembered how to print, and loved to get hard copies of their work.

The third graders revised more extensively and spent a larger number of class periods on one piece of writing. They seemed to have mastered saving and retrieving their pieces, probably because they had to do it more often. It also seemed that the third graders approached the computer more systematically than the second graders, relying less on "magical explanations" of computer functions. Within the third grade, word processing expertise had been made a desirable commodity. Students who began the year with prior computer experience were designated "computer experts." Perhaps because computer expertise was clearly valued, the children were eager to learn how to get special effects such as underlining, indenting, and paginating to create books. The students even demonstrated an understanding and appreciation for the workings of the spelling checker and learned to predict which words would not be in the dictionary (e.g., proper names and makes of automobiles).

The children I observed clearly found that word processing facilitates the writing process. This seemed to have a ripple effect on the children's writing practices and their attitudes toward writing. For example, there were 24 entries in the Young Authors Contest from the third grade class, eight of which were first drafted on the word processor. From the 24 entries there were eight winners, four of which had drafted their papers on the computer. Is there something about drafting a story on the computer that is reflected in improved quality? I asked the third grade teacher whether she had an explanation for why these children won the contest. She said that she thought their pieces were fuller and contained fewer "potholes" than the pieces which were drafted with pencil and paper. Potholes are those gaping conceptual holes where the writer has failed to supply bridges from one side to another. Frequently they occur because a child does not have the patience or energy to write out every idea. As I watched the children write at the computer, I noticed that they circled back in their writing, adding phrases or whole sentences, revising as they composed. It seems that word processing helps children







to eliminate potholes because it is easier to go back and add a sentence on the computer screen than it is to do so on paper.

Similarly, word processing affects how young students experience the writing process. For example, a poll of some of the students in this study revealed that they preferred to write with word processing because "it gives me more time to think." Let us speculate about where that additional time to think might come from. When children write with word processing they do not have to worry about their handwriting. Specifically, they do no have to think about spacing their letters, keeping them on the lines, or shaping them correctly. The children also never have to think about allowing time to copy their pieces over on "good paper." Calkins (1986) suggests that the goal of teaching writing to second graders is "fluency and voice." Facilitating the mechanical process of producing text frees up time for children to think about the messages they intend to convey, thus helping them develop both fluency and voice. In this way, word processing helps teachers and children to improve the quality of writing in a classroom.

But—and this is a crucial point—the primary responsibility for teaching writing is always the teacher's. Teachers are learning how to teach process writing. They are supporting children's writing attempts by providing helpful prewriting activities. In classrooms where the teaching of process writing is an evolving art, the computer is a valuable addition. It makes it easier for children to achieve fluency in their writing and it allows them to make revisions as they write. In short, it supports and facilitates the practices which these teachers are trying to encourage.

---

*[Jessica Kahn, Graduate School of Education, University of Pennsylvania, 37th & Walnut Streets, Philadelphia, PA 19104.]*

## Reference

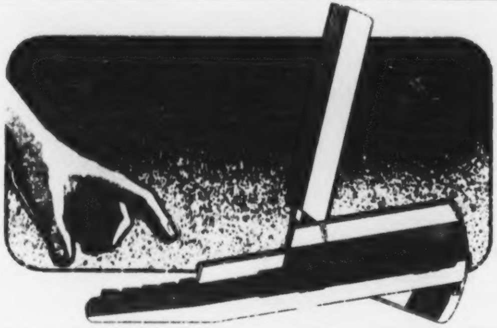
Calkins, L. (1986). *The Art of Teaching Writing*. Portsmouth, NH: Heinemann Educational Books, Inc.

## Software

*The Bank Street Writer III*. Scholastic Software, 730 Broadway, New York, NY 10003. Available for Apple IIc, IIe, IIgs; IBM PC; and Tandy 1000, all with 128K.

# The Computer As a Writing Tool

**by**
**Ellen Joslin**



*Ellen Joslin presents some excellent exercises for introducing the basic functions of word processors. To create a data disk of these exercises, use your word processor to type in each file and save it with the appropriate file name. You will need to make a copy of the data disk for each student.*

Computers are slowly but surely being integrated into the McCulloch Middle School language arts curriculum. All Highland Park seventh graders take a one-semester course in "Computer Literacy," where they are introduced to machine usage, word processors, spreadsheets, data bases, BASIC programming, etc. Our new language arts curriculum requires our eighth graders to use the computer as a tool, so they need to be especially proficient on the word processor.

Each fall the language arts teachers allow me two class periods to introduce word processing. In order to fit it all in, I've developed a set of exercises to present the "Seven Steps to Successful Word Processing." Each student buys a disk which contains the exercises for use with our word processor. As the school year passes, they store their compositions on their own disks.

On the old theory of:

1. Tell them what you are going to teach,
2. Teach it,
3. Tell them what they have learned,

we begin by loading a file called "Seven."

**Seven Steps to Successful Word Processing**

1. Retrieve file
2. Delete text
3. Insert text
4. Save file
5. Print file
6. Move text
7. Composition and creation

*File name: "Seven"*

I run through this list, defining each of the terms briefly, then cover them thoroughly with the exercises.

Retrieval is the first and easiest skill to teach. After learning how to load a program, the class as a group loads the text file titled "Poem." The teacher explains that the students have on their disks a series of eight clues which, if correctly interpreted, will allow them to find *that which is lost*. Those who can retrieve those clues by following the appropriate directions will raise the Titanic.

Dear Friends:

I'm lost in the deep, far from light
But do not weep! Put it right.

I'll give you clues to find my site.
Write them down—make sure they're right.

Take my measure, use your mind,
And a treasure you will find!!

Signed,
??????

*File name: "Poem"*

**CLUE 1:**
Write the following letters on a piece of paper. They are clues to help you find that which is lost!

M I D

Now retrieve CLUE 2

*File name: "CLUE 1"*

**CLUE 2:**
Write the following letters on a piece of paper. They are clues to help you find that which is lost!

E N I

Retrieve CLUE 3

*File name: "CLUE 2"*

**CLUE 3:**
Write the following clue on a piece of paper. It will help you find that which is lost!

THE ? IS AN "A."

Retrieve CLUE 4

*File name: "CLUE 3"*

**CLUE 4:**
Write the following letters on a piece of paper. They are clues to help you find that which is lost!

I E A L E

Retrieve CLUE 5

*File name: "CLUE 4"*

**CLUE 5:**
On a piece of paper, write the sentence below. It's a clue to help you find that which is lost!

I'—/H—D———/—N/?/F—L—/C——L—D/
—IT—N——/F—N—/—E/IF/———/—A—!

Retrieve CLUE 6

*File name: "CLUE 5"*

**CLUE 6:**
Write the following letters on a sheet of paper. They are the clues to help you find that which is lost!

T A I C I D M Y

Retrieve CLUE 7

*File name: "CLUE 6"*

**CLUE 7:**
Write the following letters on a piece of paper. They are clues to help you find that which is lost!

O U C N

Retrieve CLUE 8

*File name: "CLUE 7"*

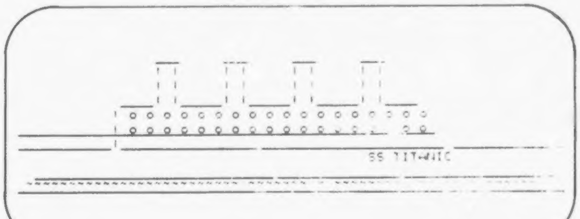
**CLUE 8:**
THIS IS YOUR LAST CLUE!

Put the letters you have written in the blank spaces in the sentence from CLUE 5. Be sure to put them in the order you uncovered them.

CLUE 3 is a special clue.

GOOD LUCK!

*File name: "CLUE 8"*



*After 75 years at the bottom of the sea, the Titanic has been found! File name: (Use the clues to find out!)*

The primary purpose of a word processor is to produce and edit text, which involves deletions and insertions. Since there is no penalty for revising on a word processor (no erasures, cross-outs or recopying), students are more willing to rewrite and perfect their work. To teach deletion techniques, direct the student to load "Max."

Direction: Move the cursor to the homonyms in this story. Delete the incorrect one. Only the homonym that fits the story should remain.

Max—the RODE/ROAD Warrior

In the DAZE/DAYS after the GREAT/GRATE war when civilization DYED/DIED and no one defended the WEEK/WEAK, THEIR/THERE came a REAL/REEL man. His name was Max. Max was not what he SEAMED/SEEMED to BEE/BE. As a man and BUOY/BOY, he followed the warrior WAY/WEIGH.

THEY'RE/THERE will never again be a hero such as he. THROUGH/THREW war and pestilence, along the desert RODES/ROADS, he fought the savages and ONE/WON. Each TAIL/TALE of daring, each FEET/FEAT of strength was told where good men MEAT/MEET.

Who'll RIGHT/WRITE the story of Max and his RAIN/REIGN as king of the highway? Who'll REED/READ and remember when Max defeated the barbarians?

*File name: "Max"*

The "Skeleton of a Story" is used to show the ease with which text can be inserted. Ideally, a printed copy of the activity (see page 19) is handed out as homework by the classroom teacher, then the students bring it, filled out, to the computer lab ready to make their insertions. When this activity is loaded from the disk, students are sure to note that the blanks have been replaced by parentheses. This was done to make the whole story fit on one screen.

**Skeleton of a Story**

Here are the "bare bones" of a story. By filling in the blanks ( ) in an interesting way, you can make any kind of story you want—mysterious, funny, sad, silly—it's up to you. Be sure to choose an interesting title. When you have finished your story, save the story on your disk and then make a printed (hard) copy of your story.

************

I always knew my Aunt ( ) was a real ( ). Why, she ( ), and one day she ( ). But even I was surprised when she told us she planned to ( ). After all, she was ( ) years old, and this could be a ( ). We told her ( ) and begged her not to ( ), but nothing could ( ), and so, although we felt ( ), we watched her ( ).

( ) passed. No one heard a ( ) from Aunt ( ). We were beginning to wonder if ( ) when suddenly our aunt appeared. She had been ( ) and she seemed very ( ). ( )ly, she told us the whole ( ). It seemed that she had ( ) and ( ). Now she was ( ), and we all felt ( ). Since then, Aunt ( ) has never ( ). Instead, she spends her time ( ). What a ( ) she is!

*File name: "Skeleton"*

Students will want to save their versions of this story to their personal disks, and the teacher may want a printed (hard) copy for grading, so now is the time to introduce saving and printing text files. Encourage students to review their work on the computer screen and to make and save improvements before printing.

As the students print their work, you might take time to demonstrate some of the print options. Show them centering, left justification, right justification, center justification, and full justification. Printing is seductive; the story comes off the printer looking polished, and kids take pride in showing off their work.

Directions: AppleWriter II offers a way to move words and paragraphs very quickly. When the arrow in the top left corner of the screen is pointing left the words and paragraphs just deleted can be inserted in a new location. CONTROL D moves the arrow. CONTROL X moves a paragraph.

To correct the nursery rhyme below:

1. Place the cursor two spaces to the right of the word "go"
2. Type CTRL D
3. Type CTRL X
4. Move the cursor two spaces to the right of the word "went"
5. Type CTRL D
6. Type CTRL X
7. Put the rest of the lines of the rhyme in correct order.

Reminder: Because each line of a poem is followed by a RETURN, the computer treats each line as a paragraph. To move a single word type CTRL W.

The lamb was sure to go!
Its fleece was white as snow.
Mary had a little lamb.
Everywhere that Mary went,

Put the rhymes below in correct order.

To fetch a pail of water.
And Jill came tumbling after.
Jack and Jill went up the hill
Jack fell down and broke his crown,

Along came a spider and sat down beside her,
Eating her curds and whey.
And frightened Miss Muffet away.
Little Miss Muffet sat on a Tuffet,

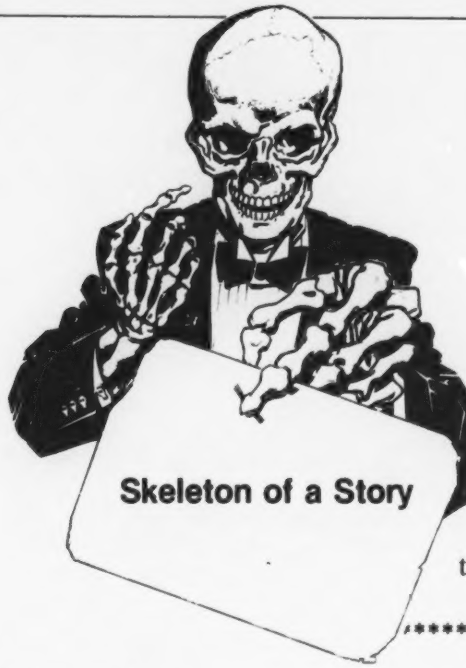
*File name: "Rhymes"*

Our final practice exercise shows the students how to move text. There is something exciting about pressing a key and watching a paragraph disappear. It's *aha!* time when the paragraph reappears in another location. Everyone knows nursery rhymes (if they don't, we write them on the blackboard), and it is fun sorting mixed-up ones into correct order.

After completing these exercises the students are ready to create their own composition as assigned by the language arts teacher. Writing assignments can be structured to meet the learning objectives of the language arts department.

Do word processors make better writers? Research indicates an improvement in writing ability. Whether or not this is always true, certainly there is more freedom to edit and more pride in a neatly printed final product.

*[Ellen Joslin, Computer Supervisor/Teacher, 9536 Park Highlands Drive, Highland Park I.S.D., Dallas, TX 75238.]*



## Skeleton of a Story

Here are the "bare bones" of a story. By filling in the blanks in an interesting way, you can make any kind of story you want—mysterious, funny, sad, silly—it's up to you. Be sure to create an interesting title. When you have finished your story, save the story on your disk and then make a printed (hard) copy of your story.

*********

I always knew my Aunt __________ was a real __________. Why she __________ __________, and one day she __________. But even I was surprised when she told us she planned to __________. After all, she was __________ years old, and this could be a __________ __________. We told her that __________ and begged her not to __________, but nothing could __________. Therefore, although we felt __________, we watched her __________.

__________ passed. No one heard a __________ from Aunt __________. We were beginning to wonder if __________ when suddenly our aunt appeared. She had been __________ and she seemed very __________. __________ly, she told us the whole __________. It seemed that she had __________ and __________. Now she was __________, and we all felt __________. Since then, Aunt __________ has never __________. Instead, she spends her time __________. What a __________ she is!

***An ICCE Copy Me! Page***

***Developed by Ellen Joslin***

# Process Writing in the One-Computer Classroom

*by*
*Kathy Pon*

As a K-6 computer teacher, I know I have the time and energy to teach the specifics of word processing as well as to design and carry out writing activities that incorporate the steps of the writing process on a daily basis. In working with the staff at my school and in talking with other teachers, I am also aware that most regular classroom teachers, particularly those with only one computer in their rooms, are more limited as to the time they can spend on these endeavors. However, it wasn't too long ago that I was a regular classroom teacher. I know that there are management and educational techniques that a classroom teacher can use to orchestrate the writing process and the vehicle—word processing itself—and still keep from going crazy.

First of all, a teacher must have a mindset of what steps of the process he or she intends to focus on. For me, although there are seven specific steps, I find it easier to break the process into four: prewriting, writing, editing/revising, and publishing. Second, I make a conscious decision that *all* of the steps will not be performed at the computer in every writing assignment. The computer has its place in all of these steps, but each teacher will have to make personal decisions about when its use is appropriate and convenient. There isn't time for a teacher with 30 students and one computer to put all of the kids on it for every step of the writing process for every writing activity assigned throughout the year. But there are times when using the word processor *is* appropriate and effective.

## Prewriting

There are many different kinds of prewriting a teacher may choose to do with students. These range from brainstorming or clustering ideas to researching and participating in sensory experiences. Prewriting may be done in groups, with the whole class, or individually. It can be done with the conventional classroom tools or it can be done on the computer.

I find brainstorming the easiest to do on the computer because students can simply toss out ideas instead of worrying about their classifications. Further, it works well when the class as a whole is sitting in front of the monitor while the teacher or one individual types the ideas generated. Then the teacher need only print the list of ideas, make copies, and distribute it to the class. Now students have their own idea-specific wordbank in front of them, which is particularly helpful for younger kids.

Individual brainstorming files may be created by the teacher. A disk containing directions is loaded into the computer when each student goes for his or her turn. For example:

> List six qualities of a good friend. Then, write some ideas telling about a good friend you've had or would like to have. When you save your list, save it with your name in the following way: Kathy.friend.

Each individual saves his or her work on a file disk; the next student simply loads the original directions and continues with the activity.

Clustering is another form of prewriting. It is a way of listing ideas, but grouping them in categories. The computer is well suited for this activity because of its inserting capacity. For example, a student might generate ideas that have to do with autumn. A good place to start is with a few topics such as the following:

Thanksgiving
The Weather
Things in Nature
The Harvest

The student can list ideas under each topic, jumping around from group to group without having to worry whether there is room to add more—there is! This activity is good cognitive skill practice for all students. It can be used in a more advanced way for older students by letting them move text around as their lists grow, putting terms that belong

### Only one computer? Tips to help you stay sane...

*by*
*Kathy Pon*

1. Always make sure your tasks, directions, and accompanying task cards are clear and simple. Take a minute to go through the steps yourself to be sure that nothing is left out. Especially at the beginning, students need to know even the simplest directions, such as when to hit or not hit RETURN. Also, make sure *every* student internalizes the rules for computer care and disk handling. This prevents disasters.

2. Pair students at the computer. This gives everyone a chance to get onto the computer in a shorter span of time, enables the less capable to work with the more capable, quickens typing time, and ensures that two minds will be solving each problem that arises. Post the computer schedule every week so that each student can find out when his or her turn is. Leave extra spaces at the end of the week for make-up times.

3. Keep your initial computer tasks limited to about 15 to 20 minutes. That's usually the average time someone can afford to be away from a class assignment. It also allows you to schedule everyone through a particular task in a week's time. Later, as students get more proficient at using the program and at keyboarding, you will find you can make the task more complicated or let them type longer papers.

4. Always station your classroom computer where it won't be too distracting to others, and so the screen will be visible to you. Seat students who might tend to watch what's going on farthest from the computer and those who tend to finish their work sooner and who can give quick aid closest.

5. Don't schedule students onto the computer when you are giving a direct lesson. Rather, have them use it when they are involved with independent practice.

6. Allow the faster students on first, and let those who really need practice wait to use the computer during less academic activities.

7. Train a core of capable students how to use your program and task cards. They can often give aid to someone who is having problems at the computer when you are busy. Also, dedicate an afternoon to teaching some of your adult volunteers how to use your task cards. They can often schedule time to come in and help. Many parents already have computers at home and some knowledge of how to use them. Nonetheless, *never* assume they know exactly what you want; they often don't.

8. Develop a help signal for students working at the computer to let you know they need assistance. In addition, specific steps should be outlined telling what to do if the pair or individual at the computer needs help (such as asking the computer student aid or doing a computer review game until you can get over to help). These steps should be posted near the computer and every student should be aware of the procedure.

9. Develop a method to keep student data files. Perhaps you can't afford to give everyone in the class a disk, but you can get five disks, one for each seat group or day of the week. Also, remember to delete work from time to time so that disks won't become suddenly filled in the middle of someone's computer time. Back up disks by copying them if the work is important. It's awful to lose 10 students' essays needed for the county speech contest two days before the deadline.

10. Teach a trustworthy parent how to print files, as it usually ends up taking a lot of time.

11. If an activity doesn't seem to be working well, don't continue it just because you feel obligated to give everyone a chance. Close down the computer for a day or two and regroup. You'll feel better, the kids will have more success, and you'll end up not hating the computer.

12. Expect at least a couple of disasters to occur as you begin to use the computer in your class. If you can learn to smile about them, they do get more rare, and you do end up having some wonderful end products!

together in groups and then naming the groups. I like to tie this activity in with grammar. Having students cluster terms by nouns, verbs, and adjectives is one way to do this (see Figure 1).

Tying prewriting to what is being studied in grammar is an excellent use of the computer. The following tasks are useful because they are short and they don't tie up the computer for long amounts of time.

> List five words to use for "said." (This list would be printed for groups or individuals studying quotation marks and conversations. They would use the words while writing a conversation.)
>
> Write five nouns that are names of things you see in the cafeteria. (This might be used as a basis for a creative story that focuses in on nouns.)
>
> List five words that have the prefix *bi*. (This might be used for writing a poem that uses words with prefixes.)

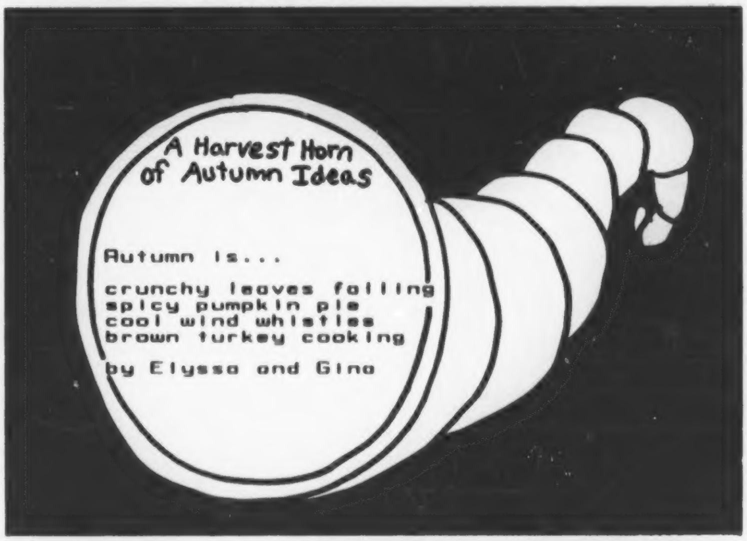
It's a good idea to keep the computer open with specific tasks such as the following, which are also forms of prewriting:

> Write one or two facts you remember about butterflies.
>
> Write one fact you've learned about Mr. Lincoln.

The resulting lists can be combined into a class fact list and printed as a resource for students researching and writing reports.

Finally, an effective way to use the computer at the prewriting stage is to write story starter questions and save them in a story starter file. Students can put their cursor in the insert mode and write their answers right after the questions without erasing the rest of the text. Questions would address the major components of the story to be written, such as "Who is the hero or heroine?" "Where does the story take place?" and "What good things happen in the story?" When finished, students would again save their work under their own names on a file disk so that the next student need only load up the original task and questions and begin answering them (see Figure 2).

It cannot be emphasized enough that the computer is an excellent tool for use at the prewriting stage. However, when there is only one tool and 30 students, the teacher will need to decide when it will be used at this point (versus another time in the writing process) so as not to tie up valuable classroom time.



A Harvest Horn of Autumn Ideas

Autumn is...

crunchy leaves falling
spicy pumpkin pie
cool wind whistles
brown turkey cooking

by Elyssa and Gino

```
wind             brown       sleeps
turkeys          spicy       falling
pumpkin pie      clear       scatter
leaves           crunchy     whistles
home             yummy       tastes
                             smells
```

*Figure 1.*

### More Ideas for Writing at the Computer

**A Science Fiction Story Starter**

Directions: Make sure your cursor is in the insert mode. Then, put your cursor on the first arrow after each question and answer it. When you are finished, move your arrow key to get to the next question. Save your work under your name + Sci (Kathy.Sci).

1. Where on earth or in the universe is the setting of the story?
2. Who is the main character of the story? Describe him or her or it.
3. What happens to the character?
4. Who or what stands in the way of the character?
5. How does he or she or it solve the problem?
6. How does the story end?

*Figure 2.*

## Writing

Some would say that when the computer is used at the writing stage, its tool capacity is greatest. After all, students have at their fingertips an instrument that encourages fluency as they write or delete text easily, bypassing horrible eraser marks and crossed out sentences. However, most elementary students don't have the keyboarding skills needed to generate text very quickly. Moreover, most teachers who have one computer in their classrooms don't have the time to allow students onto the computer for very long periods. (If each student took 30 to 40 minutes at a time for writing at the computer, it might be months before assignments were finished.) Therefore, I advocate for the one-computer classroom that most writing at this stage be done with paper and pencil.

At some point during the school year students should generate text directly on the computer so that they see how easily the writing stage can be done. However, with one computer in the classroom and 30 students, a teacher will be doing well to take the entire class through this stage just once.

But there are some one-computer activities I consider sensible and appropriate at this stage in the writing process. Here is my favorite: Have typed into the computer a short poem, ditty, or nursery rhyme with certain sentence parts underlined. Also give students a hard copy of the piece. Their task is to replace the underlined parts with their own words to fit a certain theme. To save time, students first work on their hard copies, then enter their work on the computer. In Figure 3, the tune "Silver Bells" was the blueprint for Halloween Carols. This type of exercise is worthwhile because students can still be creative, but they concentrate on writing certain parts of speech or the syntax of sentences. Also, these can be done in a short amount of computer time. And students get to practice two valuable word processing skills: inserting and deleting text.

City sidewalks, busy sidewalks,
Dressed in holiday style.
In the air there's a feeling of Christmas.
Children laughing, people passing,
Meeting smile after smile,
And on every street corner you'll see. . .
Silver bells, silver bells,
It's Christmas time in the city.
Ring-a-ling, hear them ring!
Soon it will be Christmas Day.

*Figure 3.*

Another novel use of the computer is to do a shape poem using words describing a particular concept or idea formed into a shape that echoes it. It helps to begin these ahead of time on paper and pencil because generating them on a computer can sometimes be tricky. This is especially true if the text is in a 40-column setup; often the printout fails to match the screen image.

Finally, I again like to tie writing at the computer to the grammar being taught in the classroom. By giving students short sentences to expand upon by using interesting adjectives, verbs, or prepositional phrases, you can provide them with a short writing assignment that piques their creativity and teaches a skill at the same time.

## Editing

The editing stage incorporates someone's response to the writing, actual editing for mechanics, possible revision of the text or voice of a paper, and even some evaluation of what has been written. The teaching of this skill must not be taken too lightly. As

**Creative Writing Evaluation Sheet**

| **Criteria** **Dates:** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Organization<br>(Makes sense, in order) | | | | | | | |
| Lively, precise words | | | | | | | |
| Complete sentences | | | | | | | |
| Spelling | | | | | | | |
| Punctuation | | | | | | | |
| Capitals<br>(Titles, important words) | | | | | | | |
| Neatness | | | | | | | |
| Creative ideas (Did you put much effort into this?) | | | | | | | |
| Mechanics grade | | | | | | | |
| Creative grade | | | | | | | |
| Other comments | | | | | | | |

Title ____________________

Name ____________________

*Figure 4.*

teachers we must constantly model and teach editing to our students. Thankfully, the computer has made the task a bit easier. My experience with students has been that they become quite overwhelmed when faced with editing a whole screen of text, especially if it is the first time the editor has seen the writing. A few strategies to ensure editing is done on every assignment, that it doesn't take too long, and that it isn't too difficult a task for students to do help ease this strain.

I am a great advocate of editing the first draft (usually done on paper) before a student ever gets it on screen. This can be done by the writer, by peers, or by an adult. I like to use an evaluation sheet (see Figure 4) and to concentrate on checking for one or two criteria at a time. Even though this is only a proofreading mechanism for the first draft, it helps students bypass the time wasted in typing mixed up, unorganized text into the computer in the first place. There will be plenty of time to work on computer commands that edit, move, or replace text even if the students type into the computer what seems to be a pretty good draft. There are always typos, words stuck together, paragraphs to be separated, titles and names to be centered, and trite phrases to be replaced. All these make for useful editing sessions later.

I like to have students edit in one of the following ways:

- First the writer must read through the text. If he or she cannot find any mistakes, a peer checks it over. If they both think they've got a pretty good draft, they are ready for me or another adult to sit with them and go over it.
- Sometimes editing is done for one item at a time by four students in a read-around group. The first reader will edit only for capitals, the second for punctuation, the third for spelling, and the fourth for usage. By the time I see the manuscript it's a breeze to go through. (I usually like to look at all of my student's text before it is printed, as I believe it's terrible public relations to send work riddled with errors home to parents.)

Of course, the key to this entire process is to give students practice at editing. It's not a bad idea to set up sentences or short paragraphs at the computer which focus in on specific grammar areas as well as the specific commands used to fix the errors. The teachers at my school do a lot of whole-

### How to Make a Book Using the Computer

1. PREWRITING
   How will you do it?
      Clustering
      Brainstorming
      Diagramming
      Visualization
      In/Out Charts
      Sentence Strips
   Will you do this prewriting on the computer?
   Will you use pencil and paper?

2. WRITING
   Which word processing program will you use? (Or will they do pencil and paper first?)
      Magic Slate?
      Bankstreet Writer?
      AppleWorks?
      Kidwriter?
      Print Shop?
      StoryMaker?
      Newsroom?
      Mousepaint?
   Will it be a joint or a single effort?

3. EDITING
   Will peers do it or will the teacher or will the individual writer?
   Will you print out the copy or edit on the computer?
   Will you edit for specifics or expect the students to do the entire page?

4. PRINTING
   Will students be allowed to print their work or will you or other adults do it?
   Do you want to enlarge the print?
   Don't forget titles, credits or title pages.
   Some may want to include an "About the Author."

5. ILLUSTRATING
   How will you do it?
      Paint
      Crayon
      Chalk (Messy unless you laminate the page)
      Magazine or discarded book pictures
      Their own photos

6. BOOK COVERS
   How will they be done?
      Cardboard covered with paper, wrapping paper, contact paper, fabric, or artwork
      Rings
      Tagboard
      Laminated construction paper

7. PUTTING IT TOGETHER
   (Directions for a tied book)

Cover the outer cardboard or other bookcover first.

Use a smaller piece of paper to cover the inside of the bookcover.

Lay the two covers flat on the table, leaving about 1/8 inch between them. (This will allow the jacket to close all the way.) Use packaging tape to bind them together.

Punch holes in the pages. (You may want to use the gummed hole reinforces over each of the holes to prevent tearing.)

String yarn or string through the pages first.

Mark where the yarn is and punch holes through the covers at those points. A point from a compass works well.

Pull the string through first the front cover and then the back cover.

Tie the yarn ends together while the book is open on its face. This prevents typing the pages too tight and subsequent difficult page turning.

*Figure 5.*

group editing on the overhead, giving students hard copies of the text the teacher is presenting. Again, the class will read through the text and edit for only one item at a time, first on paper and later at the computer.

### Publishing

It often seems that, by the time students get to the publishing stage of the writing process, it's time to move on to a new assignment. However, this is the most fun part of the experience for most students and it should never be left out. The published paper may be hung somewhere for others to see. Perhaps it is read to a PTA or senior citizens group, or just to classmates. Or it may be incorporated into an art project which is set out for Parent Night, displayed in a local bank for the community to see, or placed in the school library for others to enjoy.

One popular option is for students to publish a book (see Figure 5). When a writing is to be published as a book, there are a few decisions that will need to be made:

- Which word processing program will work best?
- What typestyle would you like?
- Does the program generate graphics that might add to the students' writing?
- Will the book be a joint or individual effort?
- Will students print their own work or does an adult need to do it?
- Will another program be needed to do title pages, credits, or an "About the Author" page?
- What about illustrations? Will you use crayon, paint, or photos?
- Will you laminate the pages?
- Will students cover the cardboard covers with fabric, colorful butcher paper, or contact paper?

If you can anticipate these choices ahead of time, there's only fun to be had! Some of my favorite publishing activities include the following:

- Enlarging and illustrating reports about community workers and combining them into a class book on the subject.
- Printing each line in a paragraph of a *fortunately/unfortunately* or *horrible day* paragraph separately so that each sentence becomes the text for a page in an illustrated book.
- Using a program such as *Print Shop* to print lists beginning with the letters of the alphabet for an "ABC Book of Things That Are Small" or "An ABC Book of Things That Make Us Laugh."
- Printing text written about spiders only 15 characters wide, then folding the text accordion-style and using these strips as spider's legs, attached to construction paper bodies.
- Printing "What Is Peace?" essays in small text so that they may be glued to small doves and hung on mobiles.
- Reading radio shows and plays into a tape recorder to be played back for audiences.
- Saving personal collections of writing to display on a large *me* banner for hanging during Back to School Night.

Not to be forgotten are publications that accept children's writing. Many children's magazines are always looking for original manuscripts and might never get to see the wonderful pieces that pass our desks. We need to be advocates for children in this way. (See the sidebar on this page for a list of such publications.)

Word processing and the writing process *can* become a natural part of the one-computer classroom without becoming yet another task for a teacher to do. Moreover, the teacher who does decide to take students through these steps will probably find students enjoying their writing tasks and improving their writing quality and fluency.

---

*[Kathy Pon, 2118 S. 10th St., Los Banos, CA 93635.]*

### Places That Accept Children's Writing

*Gifted Children Newsletter* appeals to Grades 7-12 and accepts games, riddles, creative puzzles, nonfiction. Submissions: "Spin Off," Gifted and Talented Publications, Inc., Route 1, Box 115, Sewell, NJ 08080.

*Highlights for Children* prints all forms of the original work in "Our Own Page" section. Must be 150 words or less and must have a note from parents or teacher stating that work is original (ages up to 16). Submissions: *Highlights for Children*, 803 Church St., Honesdale, PA 18431.

*Jack and Jill* prints articles, letters, artwork, poetry, and stories (ages 8-12). Submissions: *Jack and Jill*, 1100 Water Way Blvd., Indianapolis, IN 46206.

*Maggie Drawers Literary Magazine* (Grades 7-college) accepts poems, essays, plays, short stories. Submissions: Bryan Lindsey, Editor, USC-S, Spartenburg, SC 29303.

*Ranger Rick's Nature Magazine* prints poetry, jokes, riddles, games, and letters (ages 7-12). Submissions: *Ranger Rick's Nature Magazine*, 1412 16th St., N.W., Washington, DC 30026.

*Seventeen* is a slick magazine that welcomes manuscripts, especially opinion pieces. It is receptive to different ideas. Submissions: Cathy Rindner, 850 Third Ave., New York, NY 10022.

*Stone Soup* accepts stories of up to 2,500 words. The entire magazine is written by children: fiction, poetry, artwork, and photography (ages up to 13). Submission: *Stone Soup*, Box 83, Santa Cruz, CA 95063.

# A Word Processing Resource for Everyone

by
*Julie M.T. Chan*

**Book Review:**
**Making the Literature, Writing, Word Processing Connection: The Best of The Writing Notebook, 1983-1987**
Compiled and edited by Sharon Franklin.

Like the song "Is That All There Is?" made popular by Peggy Lee in the 1960s, word processing is sometimes narrowly viewed by some teachers as only a slate upon which words may be written in light. Many word processing books for teachers either teach the mechanics of a particular program or are recipes for using the program that turn the computer into an electronic worksheet. However, *Making the Literature, Writing, Word Processing Connection: The Best of the Writing Notebook, 1983-1987* goes well beyond that. It is an anthology; a collection of the best on what works; a compendium of ideas that teachers have developed, refined, and used with students. All of the articles were published in *The Writing Notebook* journal over the past five years and are now conveniently compiled in one volume.

*Making the Literature, Writing, Word Processing Connection* has something to offer teachers at every stage of professional growth—the novice, the apprentice, and the master--as they integrate word processing into their language arts curriculum.

As teachers acquire new behaviors and adopt new teaching methods, they go through several stages of growth, identified and described in the Concerns-Based Adoption Model (CBAM) (Hall, George, & Rutherford, 1977). The CBAM stages of concern are (0) awareness, (1) information, (2) personal, (3) management, (4) consequence, (5) collaboration, and (6) refocusing. Few publications provide for teacher growth and expertise at the various stages. Instead, most

**CONTENTS**

**Introduction**—*Jon Madian and Sharon Franklin* 1
**Chapter 1 Writing and Word Processing** 3
- Key Ideas—4
- Style Checkers Good News and Bad News—*Stephen Marcus*—6
- Survey of Elementary Students' Attitudes Toward Word Processing—*Keith Wetzel*—7
- Hazelwood West Writing Lab—*Anne Wright*—9
- How a 45-min. Writing Lab Works—10
- Connecting Literature with Writing at the Intermediate and Secondary Level—*Karen Jostad*—11

**Chapter 2 Keyboarding** 15
- Keyboarding—An Interview with Keith Wetzel—16
- Keyboarding Issues and Concerns—*Karen Jostad and Jon Madian*—19
- Keyboarding A Kinesthetic Approach to Reading Through Writing—*Jon Madian*—21

**Chapter 3 Writing Using Specific Software** 23
- FrEd Writing—*Bruce Fleury*—24
- FrEd Writing Computer Organized Writing—*Bruce Fleury*—25
- Writing with the Turtle—*Judy Bachman*—27
- "Easing" Into LogoWriter—*Judy Bachman*—30
- Writing Skills with Write On!—*Jon Madian*—33
- Writing Up a Storm An Activity for The Writing Workshop—35

**Chapter 4 Writing as a Process** 37
- Uses of the Computer in Teaching the Composing Process—*Irene D. Thomas*—38
- The Computer, Cooperative Learning, & The California Writing Project—*Alma Casey Allen*—39
- Five Helpful Tips for Teachers Who Create Their Own Composition Materials—*Tanis Knight*—42
- Prewriting Strategies—*Anne Auten*—44
- Rewriting—Using the Best of Both Worlds—*Larry Lewin*—45
- Three Editing Ideas—47
- Responding, Correcting, and Evaluating—48
- A Form to Focus Writing Conferences and Peer Editing Sessions—48
- Peer Editing Sheet—49
- Process Writing Research Topics—*Anne Auten*—51

**Chapter 5 Publishing Student Writing** 53
- Multischool Electronic Newspaper—*Craig Peck*—54
- Science, etc.—A Journal of Student Science & Math Writing—*Ann Sevcik*—55
- Multilingual Voices—*Jayne Nishizaki*—57
- A Writing Cycle Approach—58
- Organizing a Creative Writing Lab for Publishing—58
- Show Business—*Stephen Marcus*—59

**Chapter 6 Cooperative Learning** 61
- Seating for Cooperative Learning—*Jon Madian*—62
- Essential Ingredients of Cooperative Computer Lessons—*Mary Male, Roger Johnson, David Johnson & Mary Anderson*—63
- Group Role Evaluation Sheet—67

**Chapter 7 Writing Across the Curriculum** 69
- Writing in Math Class? You Bet!—70
- The Reading/Writing Connection—71
- Data Bases 'R Us—*Stephen Marcus*—72
- Five Language Acquisition Strategies for Limited English and Language Disabled Students—*Jon Madian*—75
- Are Simulations Worth Your Time?—*Shirley Keran*—77
- Angry Clouds and Frighty Fears—Science Poems—81
- Writing in the Media Center—*Sharon Franklin*—83
- Write to Think Teaching about Social Conflict through Imaginative Writing—*Bill Bigelow and Linda Christiansen*—85
- Writing in the Middle and Upper Grades—89
- S-P-E-L-L-I-N-G Ideas—91
- The Writing Family Project—*Bruce Fleury*—92

**Chapter 8 Timely Writing Ideas** 93
**Chapter 9 Poetry** 99
- Poetry and Cooperative Learning—*Jon Madian*—100
- Poetry and Cooperative Learning, Part 2—*Jon Madian*—102
- Rapping as Collaborative Poetry—104
- Inspiring Poetry—*Jon Madian*—105
- Poetry Lessons Designed for Computer Publishing—*Jon Madian*—107
- Thanks for Teaching Me—A Writing Workshop with Navaho High School Students—*Jon Madian*—111

**Chapter 10 Curriculum/Study Units** 115
- A Scope and Sequence for Story Writing—*Jon Madian*—116
- Animal Unit—121
- Mythology—123

**Chapter 11 Computer as Pen Pal** 125
- To Navaho Students in the Poetry Workshop From The Computer as Pen Pal—126
- Words Around the World The Book/Net Project—*Peter Anderson*—127
- The Computer as Literate Pen Pal—129
- Using Personal Journals to Become a Pen Pal with Your Students—*Jon Madian*—131

are written for the novice and are usually at the awareness/information level or, at best, the beginning applications level. *Making the Literature, Writing, Word Processing Connection* offers something for teachers who use word processing at every CBAM stage in the following ways:

At the **awareness** stage *Making the Literature, Writing, Word Processing Connection* piques teachers' curiosities about the wonderful world of word processing.

At the **information** stage the book covers such important issues as keyboarding, cooperative learning, writing across the curriculum, writing labs, and publishing student writing.

***Making the Literature, Writing, Word Processing Connection*** **has something to offer teachers at every stage of professional growth—the novice, the apprentice, and the master—as they integrate word processing into their language arts curriculum.**

At the **personal** stage teachers want to know how word processing will affect their instructional effectiveness. *Making the Literature, Writing, Word Processing Connection* offers helpful management tips, timely writing ideas, effective editing ideas, and even specific suggestions on making the most of a 45-minute writing lab.

At the **management** stage, teachers are concerned about the time spent getting ready to teach with word processing and preparing materials. This book provides specific curriculum and study units that can be adapted and used with any word processing program.

At the **consequence** stage teachers are concerned about the effects of word processing on students. *Making the Literature, Writing, Word Processing Connection* shares research on the effects of word processing on student attitudes towards writing and if, when, and how keyboarding should be taught.

At the **collaboration** stage teachers want to know what their *job-alikes* are doing and how to relate what they are doing to other content areas. For teachers who have been using word processors for some time, this book offers articles—written by teachers like themselves—which provide practical, classroom-tested applications on word processing and writing across the content areas.

At the **refocusing** stage teachers who have been using word processing for years want and need instructional renewal. *Making the Literature, Writing, Word Processing Connection* is a forum for teachers to share ways of doing something better. Their articles provide ideas on ways to expand the use of word processing as well as new perspectives on established strategies.

Throughout, *Making the Literature, Writing, Word Processing Connection* integrates research and theory with practical ideas and classroom-tested strategies. Articles on what works and what doesn't are authored by those who have done it, done it well, and done it with panache. The roster of contributors reads like a "Who's Who in Word Processing Applications." It's a thrill for me to read articles written by many individuals whose presentations and workshops I've attended—to see their ideas captured in print to be consulted over and over again; to hear their thinking on paper; to walk through their ideas; to be empowered with ideas to use in the classroom and know that they'll work.

If the saying "It's what you learn after you know it all that counts" is true, then I believe that I have indeed learned a lot from *Making the Literature, Writing, Word Processing Connection: The Best of The Writing Notebook, 1983-1987.* It's a must for every computer-using teacher's desk and for every professional library.

*Order from* The Writing Notebook: Creative Word Processing in the Classroom, *P.O. Box 79, Mendocino, CA 95460; ph. 707/937-2848. Make checks payable to* Creative Word Processing in the Classroom. *Prices are as follows:*

| | |
|---|---|
| *1-10 copies* | *$17.99 (U.S. $)* |
| *11-25* | *$15.99* |
| *26-99* | *$12.99* |
| *100+* | *$10.99* |

*To subscribe to* The Writing Notebook, *write to the same address. Prices are as follows:*

*School*

| | |
|---|---|
| *1* | *$30* |
| *2-10* | *$27 ea.* |
| *11-25* | *$24 ea.* |
| *26+* | *$20 ea.* |

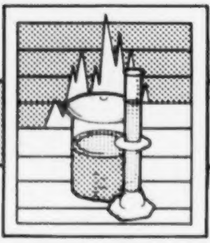
*Individual*
*$17 prepaid*
*$20 billed orders*

*[Julie M.T. Chan, Ed.D., English/Language Arts Coordinator, Orange County Department of Education, P.O. Box 9050, Costa Mesa, CA 92628-9050.]*

## Reference

Hall, G.E., George, A.A., & Rutherford, W.L. (1977). Measuring stages of concern about the innovation: A manual for the use of the SoC questionnaire. Austin, TX: Research and Development Center for Teacher Education. (ERIC Document Reproduction Service No. ED 147 342.)

# SUPPLEMENT
# SPREADSHEET



## COMPUTERS IN THE SCIENCES

**Edited by Richard Adams and Heidi Imhof**

# Mixing Science and Spreadsheets: A Recipe for Success

*by*
*Marty Schatz*

Are fifth and sixth grade students able to design and carry out a science experiment that involves testing the whole school? Can they pose and test their hypotheses about the results? Can they use the computer to help with the data analysis?

Three of my gifted students, two sixth graders and one fifth grader, were able to design and carry out a science fair project about reaction time. The actual testing was done by the sixth graders' class, enabling the whole sixth grade to be involved in the science fair project.

Reaction time for this project meant how quickly a student could grasp a meter stick released by a second student. We had to determine:

- What hypotheses to test,
- The number of subjects to be tested, and
- The set up and execution of the experiment.

I made some of the preliminary decisions. It seemed clear that all 154 students in the school should be tested to obtain enough data for student hypothesis testing, and that the 26 students in the sixth grade class could do the testing in a timely manner. The school faculty thought the process would be a good learning experience for their students, and they were more than willing to let their students participate.

**Designing the Experiment**

The key to experimentation is observing change and making comparisons. Comparisons between before and after, young and old, light and dark, etc., are the nuts and bolts of experiments. Without such comparisons we could never generate any testable hypotheses.

One of my students brought the point home when I asked for hypotheses we could test with the data we expected to collect. She said, "Well, if we tested a student twice, she would probably do better the second time." Of course her comment did more than suggest a hypothesis, it also gave some shape to

| NAME | GRADE | AGE | SEX | HAND | RESULT 1 | RESULT 2 |
|---|---|---|---|---|---|---|
| Jason | 1 | 5 | B | R | 11 | 68 |
| Mathew | 1 | 6 | B | L | 56 | 50 |
| Josh Sh | 1 | 6 | B | R | 37 | 16 |
| Justin Co | 1 | 6 | B | R | 37 | 34 |
| Jerrett | 1 | 6 | B | R | 48 | 42 |
| Trampus | 1 | 6 | B | R | 63 | 46 |
| Jonas | 1 | 6 | B | R | 80 | 40 |
| Josh Sw | 1 | 6 | B | R | 33 | 56 |
| Tony | 1 | 6 | B | R | 32 | 39 |
| Mathew Mc | 1 | 6 | B | R | 56 | 50 |
| Josh | 1 | 6 | B | R | 39 | 47 |
| Justin Ca | 1 | 6 | B | R | 35 | 24 |
| Tiffany | 1 | 6 | G | R | 72 | 57 |
| Starla | 1 | 6 | G | R | 67 | 48 |
| Matt H | 1 | 7 | B | R | 28 | 35 |
| Rodney | 1 | 7 | B | R | 49 | 47 |
| Allen | 1 | 7 | B | R | 42 | 39 |
| Roberta | 1 | 7 | G | R | 38 | 41 |
| Rebecca | 1 | 7 | G | R | 68 | 69 |
| Beverly | 1 | 7 | G | R | 38 | 29 |
| | | | AVERAGE | | 46.5 | 43.9 |
| | | | LEFTIES | | 56 | 50 |
| | | | RIGHTIES | | 45.9 | 43.5 |
| | | | BOYS | | 43.1 | 42.2 |
| | | | GIRLS | | 56.6 | 48.8 |
| | | | 6 YR OLD | | 50.4 | 42.2 |
| | | | 7 YR OLD | | 43.8 | 43.3 |

*Figure 1*

| GRADE | AVERAGE RESULTS 1 | AVERAGE RESULTS 2 | LOSS/GAIN |
|---|---|---|---|
| K | 64.6 | 49.8 | +14.8 |
| 1 | 46.5 | 43.9 | +3.6 |
| 2 | 48.9 | 48.7 | +0.2 |
| 3 | 29.2 | 26.1 | +3.1 |
| 4 | 21.5 | 23.6 | -2.1 |
| 5 | 43.8 | 38.0 | +5.8 |
| 6 | 26.0 | 19.6 | +6.4 |

*Figure 2*

our experimental design. We would have to test each student twice. Additional details of our experimental design took shape as we discussed comparisons between righties-lefties, boys-girls, and younger-older students. With these comparisons in mind we formulated the following hypotheses:

1) Reaction time of students will improve from the first to second trial.
2) The older the student, the better he or she will perform.
3) Girls will do better, on average, than boys.
4) Lefties will do better, on average, than righties.

A fifth hypothesis occurred to us only after the testing had been completed. While looking at the class by class data, we noticed that in each grade there were students of two different ages. For example, the fourth grade had students 9 and 10 years old. This observation led us to hypothesize that students of the same age in two different grades would perform at about the same level.

### Initial Conditions

The students needed to understand what conditions must be met for their experiments to be good ones. With this type of experiment, it is crucial that all of the relevant conditions in the testing situation remain stable. The meter stick should not be dropped from a height of three feet for one student and from five feet for another, or one student tested while seated and another student tested standing up. For valid results, each student had to be tested in exactly the same manner.

The students agreed that the meter stick would be dropped from a standard height and each subject would stand during the test and rest an open hand on the edge of a table top to assure a standard height for grasping the falling stick. A student's score was identified as the number of centimeters below the point where the meter stick was released that he or she caught the stick.

We decided that six teams of four sixth grade students would conduct the actual testing, with each of the four having a specific role. One student would escort the subject to the test area. A second would record all relevant information about the subject—grade, age, sex, handedness, and first and second trial results. A third would drop the meter stick and the fourth would observe the results and relay the information to the record keeper. My students were to make sure their classmates understood and followed the guidelines we had developed for conducting the testing.

### Using a Spreadsheet

The type of data collected by the students lent itself to the spreadsheet format. The information could be arranged in rows and columns, categories could be sorted by letter and number, and sums and averages could be tallied with ease. None of my students had used a spreadsheet before, although they had fairly extensive hands-on experience with the Apple in areas such as programming in Logo, word processing, and graphics/animation.

Practically speaking, it was not too difficult for intermediate students to learn how to use the spreadsheet in *AppleWorks*. I demonstrated how to operate a spreadsheet while explaining the terminology used to describe the spreadsheet's features (e.g., rows, columns, cells, values, and labels) and the procedures used to organize data in various ways (e.g., sorting information and computing averages and sums).

After the demonstration, students created the class by class spreadsheets for our reaction time experiment. Almost immediately we noticed that spreadsheets could be completed more quickly if one student typed while another dictated the data. Figure 1, the spreadsheet for the first grade, is representative of the class spreadsheets compiled for grades K-6.

Next they had to learn to sort categories by label and value and to compute averages for a given range of cells. Again, a simple demonstration of the open-apple A command for sorting and of the &AVG command for averages was enough to allow them to work on their own.

### Interpreting the Data

The first hypothesis was that students were expected to improve their reaction time from the first to the second trial. They created the spreadsheet in Figure 2 to summarize the

| AVERAGE GRADE | AVERAGE SEX | RESULT 1 | RESULT 2 | LOSS/GAIN |
|---|---|---|---|---|
| K | B | 72.0 | 50.8 | +21.2 |
|  | G | 56.3 | 48.8 | +7.5 |
| 1 | B | 43.1 | 42.2 | +0.9 |
|  | G | 56.6 | 48.8 | +7.8 |
| 2 | B | 40.5 | 55.5 | −15.0 |
|  | G | 58.0 | 41.0 | +17.0 |
| 3 | B | 28.7 | 24.0 | +4.7 |
|  | G | 30.0 | 29.3 | +0.7 |
| 4 | B | 22.6 | 17.5 | +5.1 |
|  | G | 20.3 | 29.7 | -9.4 |
| 5 | B | 33.1 | 30.3 | +2.8 |
|  | G | 48.9 | 47.8 | +1.1 |
| 6 | B | 22.2 | 16.3 | +5.9 |
|  | G | 29.1 | 22.3 | +6.8 |

*Figure 3*

| GRADE | AGE | RESULT 1 | RESULT 2 |
|---|---|---|---|
| K | 5 | 70.5 | 52.8 |
|  | 6 | 50.4 | 42.8 |
| 1 | 6 | 50.4 | 42.2 |
|  | 7 | 43.8 | 43.3 |
| 2 | 7 | 47.6 | 49.6 |
|  | 8 | 50.6 | 47.2 |
| 3 | 8 | 32.2 | 26.0 |
|  | 9 | 24.8 | 26.4 |
| 4 | 9 | 21.3 | 23.0 |
|  | 10 | 22.3 | 27.0 |
| 5 | 10 | 51.9 | 43.8 |
|  | 11 | 23.9 | 23.9 |
| 6 | 11 | 25.2 | 20.5 |
|  | 12 | 27.4 | 18.4 |

*Figure 4*

data by grades for these categories. Students were able to see that their first hypothesis held except for the fourth grade.

The second comparison was between lefties and righties. Here we learned an important lesson. There were never more than three students in a grade designated as lefties. Had we collected enough data to make a significant comparison? The students concluded that we probably hadn't.

I also later learned that part of the reason for the low numbers of lefties was due to an omission on my part. I mistakenly assumed that record keepers would classify students as left-handed if they threw, wrote, or ate with their left hands. Instead students were listed as left-handed only if they used their left hands to grasp the meter stick during the experiment. Apparently there were a number of students who would ordinarily be called left-handed, but, because they used their right hands in the trials, they were classified as right-handed. The lesson here: Data collection is not straightforward and simple. My students learned the importance of considering all of the possible cases they might come across in a given category and that they needed to use this information to determine their classification rules. A careful definition of *handedness*, for example, would have included a place for ambidextrous students and specified the precise criteria that established a student's handedness (writing vs. eating vs. throwing).

The next comparison is between boys and girls. We hypothesized that girls would do better than boys. The hypothesis was not true for the first grade. Students noted that the boys did better than the girls in both the first and second trials although the girls improved more than the boys from one trial to the next. In fact, as Figure 3 reveals, in five out of seven classes the boys out-performed the girls.

The final two hypotheses tested had to do with age differences. Older students were expected to perform faster, and students of the same ages split between two different grades were expected to perform at about the same level. Analysis of these hypotheses was based on the spreadsheet in Figure 4.

It was very satisfying to watch my students develop this age comparison spreadsheet. By now they were comfortable with the open-apple A command. When I explained that I wanted them to do a sort on the two age groups in each class they knew right away to use the "values from 0 to 9" format. Next they computed first and second trial averages for each of the sorted age categories. They were now quite adept at using the &AVG command.

| GRADES | 1ST AVERAGE | 2ND AVERAGE |
|---|---|---|
| K-3 | 47.3 | 42.1 |
| 4-6 | 30.4 | 27.0 |

*Figure 5*

A final round of sorting was necessary to analyze the first hypothesis about age and ability. I drew their attention to the data that showed every 10 year old was not faster than every 8 year old, nor did the average fifth grader outperform the average third grader. As such, we could not say our hypothesis was true. After much discussion, we agreed that the only way to analyze this hypothesis was to separate all students into two groups: grades K-3 and grades 4-6. (Figure 5).

Based on this grouping it is easily seen that the older group did better in both the first and second trials. We concluded that our hypothesis was true.

The age comparison spreadsheet also provides the data for testing our "same age/split grade" hypothesis. We found in four out of six age/grade comparisons that there was no significant differences in the scores. The exceptions went both ways. There were 8 year olds in second grade who grasped the meter stick approximately 21 centimeters lower than 8 year olds in third grade and 10 year olds in fifth grade who grasped it 16 centimeters lower than 10 year olds in fourth grade. Given these results, we concluded our hypothesis was only tentatively true.

**Conclusions**

The reaction time experiment was a very fulfilling experience for both my students and myself. When the printed spreadsheets were attached to poster board for a display, we were all quite proud. The students couldn't believe they had produced all that work. I was elated to see that fifth and sixth graders could master the techniques needed to create moderately difficult spreadsheets, and that they had learned a formidable amount about conducting a good scientific experiment.

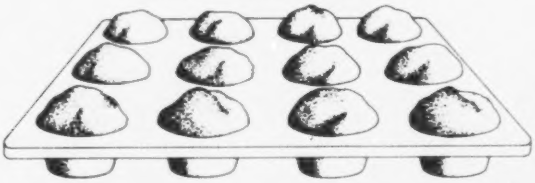
I am a teacher of the gifted (K-8), but I see no reason why this project couldn't be done with a sixth grade class. The time needed to teach the spreadsheet skills might be greater and would of course vary with the skills and prior computer experience of the particular group.

It would be interesting to see whether the results of our experiment could be replicated at other schools. If you are an upper elementary teacher, I encourage you to take the plunge. At the very least, I think you'll find mixing spreadsheets and science is a very fine recipe for success.

*[Marty Schatz, Fellowsville Elementary School, Route 1, Box 265, Tunnelton, WV 26444.]*

# Spreadsheets: More Than Just Finance

*by*
*Arthur Luehrmann*



Herbert Peckham and I recently completed a short textbook that introduces students to common application software. The text is based on a sequence of guided hands-on activities that introduce word processor, data base and spreadsheet applications. Word processing and data base software turned out to be fairly easy to teach; motivating examples are easy to find and the basic activities—writing text and searching for information—are familiar chores for all students.

Teaching spreadsheet use is another matter altogether. Finding motivating examples that are within students' experience is difficult. Moreover, the task of learning what a computer spreadsheet is and how it works is at least as complex as learning the elements of BASIC or Logo. A spreadsheet *is* a program, in a limited language, of course. Many of the "learner traps" that occur when teaching elementary programming ideas to beginners also occur when introducing computer spreadsheets.

I realize the creators and publishers of spreadsheet software would have the public believe that these programs are virtually self-explanatory—that a person who has never used a computer before can just sit down at the keyboard, plunge right in and become an instantaneous spreadsheet wizard. Not so, and the proof is the fact that an entire training industry has grown up to teach business managers how to create spreadsheets with their PCs. Computer teachers and curriculum coordinators should keep this fact in mind.

A final point before moving on: The following discussion assumes that readers have used a spreadsheet program, such as *VisiCalc, Multiplan, Lotus 1-2-3* or the spreadsheet portion of *AppleWorks*. This article is not intended as a primer on spreadsheet use.

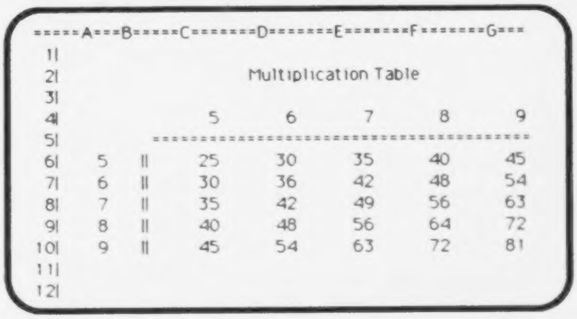
## Choosing the Examples

The first problem to be faced when teaching about spreadsheets is choosing appropriate examples. What particular uses will be interesting but at the same time not so complex as to overwhelm students with the "power" of this tool?

This is not an easy question to answer, we found. Most "serious" applications of spreadsheets are financial. They involve a lot of number work, formulas and functions in which the typical junior-high or high-school student is not keenly interested. Worse yet, any realistic financial application would introduce dozens of new concepts at the same time. A step-by-step approach works far better.

The best starting point is no application at all—just a blank spreadsheet. Students' first task (after loading the software and indicating that a new spreadsheet is to be created) is to understand how to move the cursor to a cell, enter information, edit it and delete it. This is best done with a totally blank spreadsheet so that *whatever* is displayed on the screen is the result of actions taken by the student. (I will return to these early explorations in the section, "Sequencing the Concepts.")

The disadvantage of a blank spreadsheet is that it tells very little about the things spreadsheets are useful for. As soon as students are familiar with entering information into a blank spreadsheet, it is time for them to see a simple example of a complete spreadsheet. A nice one that we have used is a multiplication table. When students load file MULTIPLY from a disk, the screen looks like figure 1.



```
=====A===B=====C=======D=======E=======F=======G===
  1|
  2|                  Multiplication Table
  3|
  4|                 5       6       7       8       9
  5|             =======================================
  6|   5   ||       25      30      35      40      45
  7|   6   ||       30      36      42      48      54
  8|   7   ||       35      42      49      56      63
  9|   8   ||       40      48      56      64      72
 10|   9   ||       45      54      63      72      81
 11|
 12|
```

*Figure 1.*

The result is simple and familiar, but interesting things are hidden under the numbers in the table. Guide students to move the cursor to cell C6. The number on the screen is 25, but the cell indicator shows the *formula* 5•5. The situation in cell C7 is similar: The screen shows 30, but the cell indicator shows 6•5.

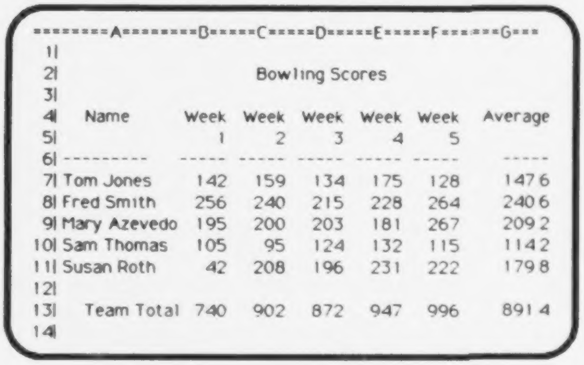
This experiment may not seem terribly exciting to people familiar with computer spreadsheets. But when beginners first look at a spreadsheet, they generally see only what is on the screen. They often fail to recognize the fact that the numbers displayed are a *consequence* of the information that defines the spreadsheet. This is a key idea, essential for work with spreadsheet programs.

This same example also introduces formulas containing ***cell names.*** Guide students to cell C10, which shows 45 on the screen. The cell indicator this time shows that the information in the file is not 45, nor is it 9•5. Instead, it is A10•C4. Cell A10 contains the number 9, and C4 contains the number 5. Students learn that a number can be used in a formula by giving the name of the cell that contains the number.

Then have students explore the formulas in the remaining cells in the bottom row. These formulas all refer to cell A10. (See figure 4 for a display of all the formulas in the spreadsheet.) What will happen if students change the number in cell

A10 from 5 to 10? They make the change and see the numbers in the bottom row change immediately to 50, 60, 70, 80 and 90. Change the number in cell A10, and you change all results that depend on it: This is another key idea often not fully understood.

With the idea of cell names established, it is time to introduce simple functions. A nice, friendly example might be the scores of individuals and teams in some sporting activity. This application requires the calculation of sums and averages. Here is what a bowling team record might look like after five weeks of play:

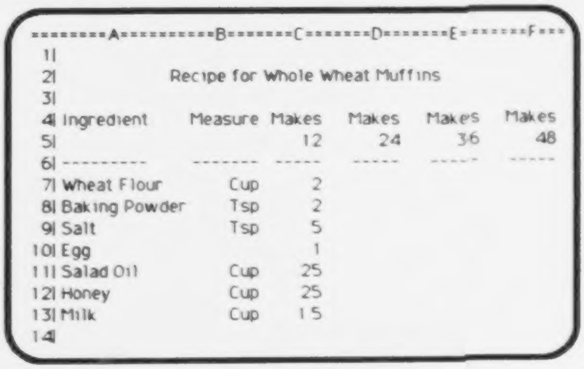


```
=========A=========B=====C=====D=====E=====F=======G===
 1|
 2|                     Bowling Scores
 3|
 4|   Name         Week  Week  Week  Week  Week   Average
 5|                   1     2     3     4     5
 6| ---------     ----- ----- ----- ----- -----    -----
 7| Tom Jones       142   159   134   175   128    147 6
 8| Fred Smith      256   240   215   228   264    240 6
 9| Mary Azevedo    195   200   203   181   267    209 2
10| Sam Thomas      105    95   124   132   115    114 2
11| Susan Roth       42   208   196   231   222    179 8
12|
13|   Team Total    740   902   872   947   996    891 4
14|
```

*Figure 2.*

The column at the right shows each bowler's average score. The row at the bottom shows the total team score each week. The lower right cell shows the sum of the averages. When students move the cursor to any of these outer cells, a formula containing a ***function*** appears in the cell indicator. They discover the formulas @SUM, @AVG and @COUNT as well as the use of ***cell range*** notation.

After these ideas become secure, it is time for another example, this one specialized to teach the concept of copying (replicating) a formula. A familiar, non-financial application for this is recipe doubling. You have a recipe for making muffins, but the amounts for each ingredient will make enough for only 12 muffins. What should the amounts be for 24, 36 or 48 muffins? The students load file MUFFINS and the screen looks like this:



```
=========A===========B========C========D========E========F===
 1|
 2|                 Recipe for Whole Wheat Muffins
 3|
 4| Ingredient       Measure  Makes    Makes    Makes    Makes
 5|                             12       24       36       48
 6| ----------       -------  -----    -----    -----    -----
 7| Wheat Flour          Cup      2
 8| Baking Powder        Tsp      2
 9| Salt                 Tsp      5
10| Egg                           1
11| Salad Oil            Cup     25
12| Honey                Cup     25
13| Milk                 Cup    1 5
14|
```

*Figure 3.*

The students look at cells C7 through C13 and discover that each cell simply contains the numbers visible on the screen. What is needed in the column labeled "Makes 24" is seven formulas to double the numbers in the "Makes 12" column. Have students move the cursor to cell D7 and enter the formula 2•C7. Then teach them how to make a ***relative copy*** of the formula down the rest of column D. Finally, have them practice copying by repeating the process with the columns labeled "Makes 36" and "Makes 48."

I cannot resist telling a tale at this point. After arduous false starts, we finally hit upon the recipe idea for teaching formula replication. The original version of the recipe program was for waffles. It seemed perfect: The formula to be copied would contain only a single cell name; the application was non-financial; everyone knows how to make waffles; and you can double a waffle recipe to your heart's content without changing the quality of the result. So we created the WAFFLE file, wrote our manuscript accordingly, and shipped both off to our publisher.

In a matter of days, we received a distressed call from New York. "We can't use the waffle example. It's junk food," we were told, "and you can't use junk food in a book you want to sell in California." We protested, and our editor backed down slightly, saying, "Well, actually the waffles are okay, but they're always eaten with syrup. Syrup is sugar, and in California anything that has lots of sugar is junk food."

What to do? We had this dream example, but our editor was confident that some committee in Sacramento (who probably fed their children waffles once a week) would throw out a computer book because it mentioned a food that might be used with a sugar product. Should we get the California Sugar Beet Growers involved? No, that would take too long. Our editor began searching through the *Tassajara Cookbook* for something pure enough to satisfy the committee, but we all agreed that kids probably wouldn't go for anything made with "sprouted buckwheat flour."

A compromise suggestion was whole wheat muffins: not exactly a treat to make the average junior high student shiver with excitement, but better than sprouted buckwheat. We actually baked up a batch, and they weren't bad.

But I digress. The main features of the spreadsheet examples described above are these: They are familiar to all students, they require a minimum of math background and, most important, they each introduce one or two fundamental concepts in a careful, step-by-step manner. The specific examples we chose are unimportant, but we are convinced that any good set of examples will share these three traits.

## Sequencing the Concepts

Closely related to the problem of choosing good examples is the problem of breaking the learning task into small chunks, assuring that each is understood before introducing the next. This problem is so tied up with the proper choice of examples that I have already said a good deal about it. Still, there is more to say.

The first conceptual task for the learner is to recognize that any given spreadsheet is a collection of information which may be entered from the keyboard, edited, saved in a disk file, and loaded back into the computer's memory. To establish this idea, a good starting point is a new, empty spreadsheet, as suggested earlier. The only information it contains is what the student enters at the keyboard.

To enter information on a spreadsheet, students must first learn to move the cursor from cell to cell. The first item to be entered should be a short label, such as the word "hello." Students discover that the letters typed appear in the ***cell indicator*** as well as at the location of the cell cursor. Next have students move the cursor to another cell and type a number. This time the digits appear only in the cell indicator until the RETURN key is tapped; then the number appears in both places. From the screen prompts, students learn the terms ***label*** and ***value.***

At this point it seems as though the computer simply copies into a cell on the screen whatever you type on the keyboard. The only oddities are the fact that the typed characters also appear in the cell indicator and that the computer distinguishes between labels and values.

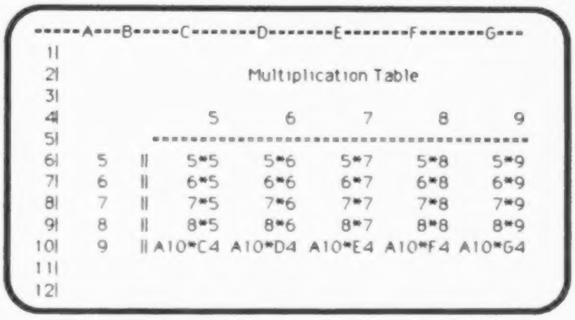
## Screen Cells and File Cells

With this basic understanding established, it is time to introduce something truly new and different. Have students move the cursor to an empty cell and type, for example, 32 + 21. As usual, these five characters appear in the cell indicator; however, when the RETURN key is tapped, the number 53 appears in the cell where the cursor is. This little experience is a gold mine; it shows students that they can enter a ***formula*** and the computer will calculate the result and display it as ***output.***

Now is a good time to introduce new terminology that will help keep these ideas straight. Tell your class that there are two versions of every spreadsheet cell. When they move the cursor to cell B2, for example, and enter information from the keyboard, the information goes into ***file cell*** B2, which is normally visible only via the cell indicator. The characters displayed in ***screen cell*** B2 are a result of the information stored in file cell B2. If file cell B2 contains a label or a simple number, screen cell B2 displays the same label or number. But if the file cell contains a formula, the computer calculates and displays the result in the screen cell.

If you succeed in getting students to understand the difference between file cells and screen cells, they will have avoided the worst misconception in work with spreadsheets: the belief that the visible spreadsheet is the only one or the most important one. In fact, the file cells are vastly more important than the screen cells; they tell the computer what to display in the screen cells. When a spreadsheet is saved on disk, only the file cells are saved (hence the name "file cell"). When it is loaded into memory, the computer uses the file-cell information to create the screen cell display.

The idea of file cells can be made more concrete with certain spreadsheet programs, such as *AppleWorks,* which have a command for switching back and forth between viewing the screen cells and viewing the file cells. Seeing the file cells arrayed over the whole screen makes their existence a good deal more believable. For example, figure 4 is how the multiplication spreadsheet in figure 1 looks when given the command to view the file cells.



```
-----A---B-----C--------D--------E--------F--------G---
  1|
  2|                       Multiplication Table
  3|
  4|                    5        6        7        8        9
  5|              ----------------------------------------------
  6|     5    ||      5*5      5*6      5*7      5*8      5*9
  7|     6    ||      6*5      6*6      6*7      6*8      6*9
  8|     7    ||      7*5      7*6      7*7      7*8      7*9
  9|     8    ||      8*5      8*6      8*7      8*8      8*9
 10|     9    || A10*C4   A10*D4   A10*E4   A10*F4   A10*G4
 11|
 12|
```

*Figure 4.*

## Cell Names in Formulas

The need to distinguish between file cells and screen cells was triggered by a simple experience: Students entered a simple formula, such as 32 + 21, and noticed that the screen cell contained 53. Of course, useful spreadsheets rarely contain formulas with numbers alone. The next new concept to introduce, then, is the use of ***cell names*** in formulas.

For this purpose, it is best to begin with an existing spreadsheet that contains both simple formulas and formulas with cell names. The multiplication table shown in figures 1 and 4 does this job nicely. By using the cell indicator as a peep hole into the file cells, students discover that some of the formulas in the multiplication table contain cell names. As explained earlier, students can vary the number in a cell referred to by cell name (cell A10) and see new results appear immediately in the screen cells (cells C10 through G10).

A nuisance issue must be discussed at this point: If you enter a formula that begins with a cell name, the computer treats it as a label. This is the time to discuss the "first-key" rule: When entering information, the first keystroke determines whether a label or value is to be entered. An initial letter means a label; an initial numeric digit means a value. Teach the tricks for working around this situation: A quotation mark always signals the start of a label (but is not part of the label) so should be used when a label is made up of digits, such as a date or year. A plus sign always signals that a value will follow, so a formula that begins with a cell name (and therefore a letter) should be preceded by a plus sign.

## Spreadsheet Functions

With cell names clearly understood, students are equipped to explore ***functions.*** Most spreadsheet programs offer dozens of built-in functions for calculating different kinds of results: square root functions, exponential functions, absolute value functions and many more. For the most part, these are esoteric topics best omitted in an introduction.

But certain functions are so essential to any useful spreadsheet that even beginners need to know about them. An obvious example is the SUM function for adding a column of figures. This topic is best introduced through examples in existing spreadsheets where their use makes sense (the bowling scores file, figure 2, is one such example). Students discover the functions, both alone and in formulas, and explore their effects.

To use these important functions, students need to know only a few things: the names of the functions, the notation for a ***range*** of cells, and the fact that functions can be used as part of a formula. A detailed discussion of syntax is probably out of order for most students.

## Replicating Formulas

The topic of copying (replicating) a formula should be taken up only after all the above concepts are well understood. It is a very tricky topic, and in a basic sence, a very unimportant one.

I can almost hear seasoned spreadsheet users howling their protests over the last sentence, so let me be clear about what I mean. Copying formulas is purely an *editorial* feature of a spreadsheet program. That is, it is only an aid to the creation of a spreadsheet; once a formula has been put into a spreadsheet, there is no way to tell whether it got there by being typed manually or by being copied from another formula. One can read and understand any spreadsheet without knowing about copying.

On the other hand, no one would use a spreadsheet program that lacked the ability to copy a single formula into many locations while making suitable adjustments in the copies. This feature may be only editorial, but since most of one's time at the computer is spent in creating and editing information, the copy function can be important. Any introduction to spreadsheet use, however brief, should include this topic.

The best approach is to begin with a *very* simple example, such as the muffin recipe spreadsheet in figure 3. The first step should be to learn to copy the simplest items from one place to another. Have your students begin by copying a label, then a simple numeric value. This way they will understand the sequence of commands necessary to identify the source cell and the range of destination cells, but may ignore for now the question of ***relative*** vs. ***no-change*** modes of copying.

Once students understand the basics of copying, it is time to have them copy a formula that contains a cell name (just *one* cell name, please). If you use the recipe example, have the students do it the "wrong" way first. That is, have them copy the formula in no-change mode; after all, this is the simplest case to understand, since the cell name in the formula is copied exactly. If the original formula in cell D7 is 2•C7, the copies in cells D8, D9, etc., will also be 2•C7. No-change mode means that the cell name is copied just as though it were a number or a label.

Next have the students repeat the copying process for the same formula, but this time using relative mode. They will be immediately gratified to discover that each recipe amount is properly multiplied this time. By exploring the copied formulas, they can see how the cell name was "shifted" as the formula moved down the column: While 2•C7 appeared in cell D7 originally, the copy 2•C8 appears in cell D8, the copy 2•C9 appears in cell D9, and so on. As the formula moved down, the cell name "moved down" with it. That is the basic idea of relative copying.

Relative copying is a slippery concept. Students get a quick, intuitive grasp of the idea, but it slips away just as fast. We have found an effective way to make it stick, and the heart of the method is to have students use "relative language" when describing a formula to be copied. Suppose, for example, that cell D3 contains the formula D2•C3. Have students rephrase the formula like this: the contents of the cell *above* times the contents of the cell to the *left*. More briefly, the formula is "above•left." Then explain that the goal of relative copying is to make each new formula have the same meaning as the original, when expressed in relative language. Thus, if the formula here is copied into cell G8, we want the copy also to be "above•left." Since cell G7 is above G8, and F8 is to the left, the new copy should be G7•F8, and that is exactly what relative copying gives us.

Once students begin to understand how relative copying works, it is essential to provide opportunities to practice what they have learned. Using the recipe example, ask them to repeat the process, creating new columns for tripling the ingredients, quadrupling, and so on.

## Benefits of a Little Programming Knowledge

The basic concepts described above can be taught to first-time computer users. But if students know a little Logo or BASIC, teaching spreadsheets is vastly simpler. You need not spend time on computer fundamentals but can quickly move ahead to interesting spreadsheet applications. ***I strongly advise anyone who is planning a computer curriculum to make at least six weeks' exposure to programming in Logo or BASIC a prerequisite to instruction in spreadsheet use.*** Doubters should read on.

The basic concepts needed for work with spreadsheets are entering information, editing it, saving it on a disk, loading a disk file into memory, knowing about labels, values, cell names and formulas, and understanding that file cells contain instructions telling the computer what calculations to make and what to display in the screen cells. Each one of these ideas is already familiar to people who have learned the elements of programming, though different terms are sometimes used.

Writing a program also requires learning how to enter information into the computer, edit it, save it on a disk, and load a disk file into memory. In the case of programming, the information is a sequence of BASIC statements or Logo commands. In the case of spreadsheets, the information is an arrangement of labels, numbers and formulas in a rectangular table.

Spreadsheet programs distinguish between two types of information: ***labels*** and ***values.*** These are just new names for ***string data*** and ***numeric data,*** topics covered in elementary programming classes.

A spreadsheet ***formula*** is the same thing as an ***expression*** in programming. In BASIC, for example, you can write this statement:

```
LET X = 23 • 5 + 37
```

The spreadsheet formula 23•5 + 37 has exactly the same meaning and effect.

A ***cell name*** in a spreadsheet formula means the same thing as a ***variable name*** in programming. The spreadsheet formula B3•A2 and the BASIC or Logo statement PRINT B3•A2 have an almost identical meaning: Go to locations B3 and A2, multiply the numbers found there, and display the result.

Programming languages have built-in *functions*, and so do spreadsheets.

The main point is this: A spreadsheet really is a computer program whose instructions are contained in all its individual file cells. The information in each file cell tells the computer what calculations to make, what result to display and where to display it.

The statements in a BASIC program are performed by the computer only when you give the RUN command. The instructions in a spreadsheet are performed whenever you make a change in a file cell. The computer performs the new instructions on the edited file cell, then goes to the file cell at the upper left corner of the spreadsheet. After carrying out the instructions there, it proceeds to the next file cell (in either row or column order) and carries out those instructions, continuing until it reaches the lower right-hand cell. All this happens very quickly, but it happens in strict sequence, just as with a BASIC or Logo program. (Many apparent "peculiarities" of spreadsheets are easily understood once the upper-left to lower-right order of execution is pointed out: for example, why recalculation is sometimes necessary when a formula in one cell refers to a cell that is to the right or below it.)

A student who understands these elementary programming concepts is far better prepared to master spreadsheets than is a student who must simultaneously develop these concepts and learn the details of spreadsheet editing: the "first-key" rule, copying formulas, relative mode, etc.

Can this argument be turned around? If spreadsheets are so similar to programs in BASIC or Logo, why not make spreadsheet skills a prerequisite for programming classes? There are two principle reasons not to. First, spreadsheet uses all focus on numeric problems, most of them quite uninteresting to students. Elementary programming activities can be based on graphics and text processing problems of far greater appeal. Second, a spreadsheet user has a very limited view of what a computer can do: Since the spreadsheet language offers only calculation, assignment and output instructions, it is like a programming language with little more than a LET statement and a fancy PRINT statement. Elementary instruction in Logo or BASIC, on the other hand, gives the student a far deeper understanding of what a computer is and what it can do.

## Conclusion

In teaching spreadsheet use to beginners, a good deal of attention must be given to the choice of interesting examples. Most realistic applications are in finance or accounting, topics of little interest to the average student. Furthermore, most realistic applications are too rich; they introduce too many concepts at once. The teacher must carefully choose a sequence of examples, each of which demonstrates only one or two new features.

Closely tied to the choice of examples is the sequencing of concepts to be taught. We suggest this sequence: Entering labels and values into spreadsheet cells should come before entering formulas; formulas with only numbers should come before formulas with cell names; the idea of file cells vs. screen cells should be introduced along with formulas; functions should come after cell names and cell ranges are understood; copying (replicating) formulas should come last.

Finally, I have made a case for teaching the elements of programming in Logo or BASIC before introducing spreadsheets. If students are already familiar with computer operations, editing, data types, constants, variables, functions, assignment and output, they will be well equipped to understand and use spreadsheet software. Without this degree of computer literacy, however, a student will have to do double duty: mastering basic computer concepts while learning the unique features of spreadsheets. This situation is especially serious when, as so often happens, the main interest of the teacher is in applying spreadsheets, not explaining how they work.

*[Arthur Luehrmann, Computer Literacy, 1466 Grizzly Peak Blvd., Berkeley, CA 94708.]*

# COMPUTERS IN THE SCIENCES

**Edited by Richard Adams**

## *AppleWorks* Afield

*by*
***A. W. Strickland***

> *You're an elementary teacher involved with science and you see neat things for the secondary level. Or perhaps you can find good software on the market but you don't have the money in your budget for the whole package. Or maybe the programs look good, but just don't quite fit exactly with your program.*
>
> *Maybe what you need is less specific software.*
>
> *Al Strickland shows how he used one general purpose program,* AppleWorks, *to simplify and amplify a lesson from a standard textbook. The lesson gained more meaning, it turned out to be easier, and the kids got some experience using a program which will be of use in more than one application.*
>
> AppleWorks *is quite powerful, but other spreadsheets, data bases or word processors can be used as well. If kids get the idea that the computer can be a general purpose tool, they will be far along in today's world.*
>
> *—Richard Adams*

Nearly all the elementary classrooms in Montana have microcomputers, but most lack a rich reservoir of software. Many elementary school teachers seek guidance on how to integrate the use of microcomputers with the variety of curriculum areas they address. At Eastern Montana College we developed, with the aid of several elementary teachers from the Billings Public School System, a prototype unit to integrate microcomputer software with the elementary science curriculum.

The goal of the project was to familiarize students with the populations and types of various organisms inhabiting a particular area by using computer software to collect, report, and interpret data (adapted from Science Curriculum Improvement Study, 1972).

Prior to the commencement of this activity, we thought particular knowledge and skills would be essential to its successful completion:

1. Completion of Chapter 1 of the *Populations Unit* (SCIS) activities, which review observation techniques, plant and animal characteristics, and concepts of organism and habitat;
2. Previous keyboarding experience (the school system offers computer keyboarding during the second grade); and
3. A modest introduction to *AppleWorks* (each of the two teachers involved spent approximately one hour with groups of two to four children going over word processing, spreadsheets, and data base activities using *AppleWorks*).

Having completed the prerequisites, we identified an area near the school where a variety of plants and animals were present. A 10-meter by 10-meter area (a micro habitat) was divided into 25 plots (each four square meters), numbered from 1 to 25. Each student pair constructed a map of the entire area. From these student maps, a final, detailed map (figure 1) was constructed on a Macintosh using *MacPaint* (*Paintworks* on

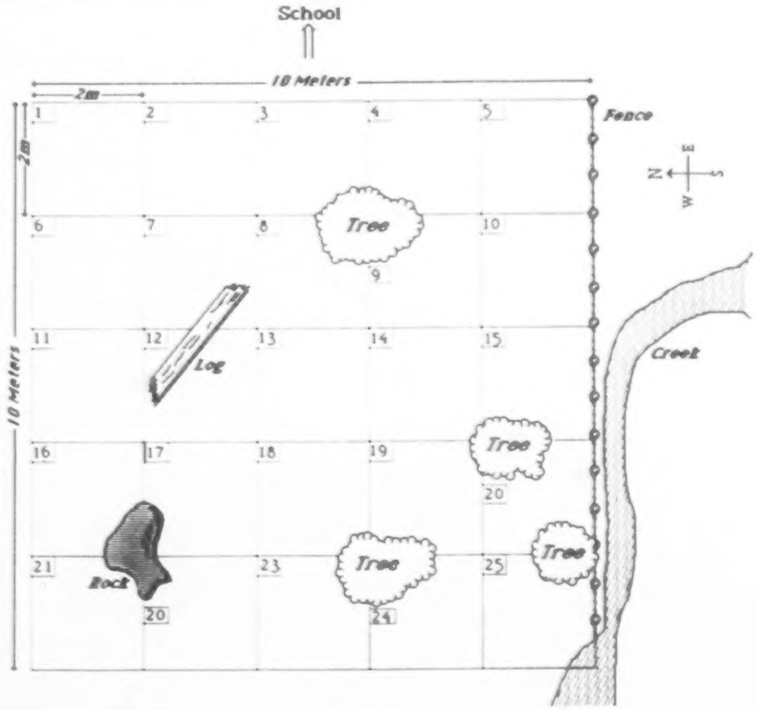
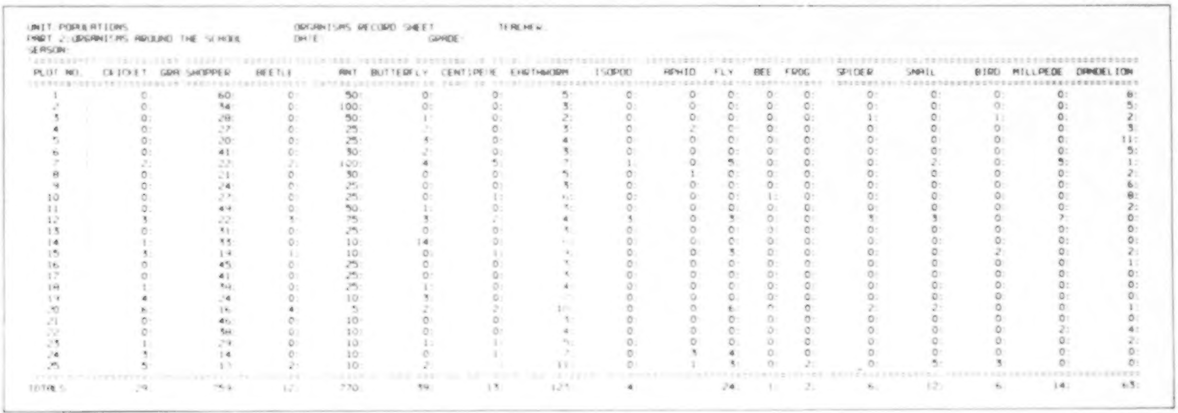


*Figure 1.*



UNIT POPULATIONS
PART 2: ORGANISMS AROUND THE SCHOOL
SEASON:
ORGANISMS RECORD SHEET
DATE:
GRADE:
TEACHER:

| PLOT NO. | CRICKET | GRASSHOPPER | BEETLE | ANT | BUTTERFLY | CENTIPEDE | EARTHWORM | ISOPOD | APHID | FLY | BEE | FROG | SPIDER | SNAIL | BIRD | MILLIPEDE | DANDELION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 60 | 0 | 50 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 2 | 0 | 34 | 0 | 100 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 3 | 0 | 28 | 0 | 50 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 4 | 0 | 27 | 0 | 25 | 2 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5 | 0 | 20 | 0 | 25 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 6 | 0 | 41 | 0 | 30 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7 | 2 | 22 | 2 | 100 | 4 | 5 | 7 | 1 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 5 | 1 |
| 8 | 0 | 21 | 0 | 30 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 9 | 0 | 24 | 0 | 25 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 10 | 0 | 27 | 0 | 25 | 0 | 1 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| 11 | 0 | 49 | 0 | 50 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12 | 3 | 22 | 3 | 75 | 3 | 2 | 4 | 3 | 0 | 3 | 0 | 0 | 3 | 3 | 0 | 7 | 0 |
| 13 | 0 | 31 | 0 | 25 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 1 | 33 | 0 | 10 | 14 | 0 | [illegible] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 3 | 14 | 1 | 10 | 0 | 1 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 16 | 0 | 45 | 0 | 25 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 17 | 0 | 41 | 0 | 25 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 1 | 34 | 0 | 25 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 4 | 24 | 0 | 10 | 3 | 0 | [illegible] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 6 | 16 | 4 | 5 | 2 | 2 | 10 | 0 | 0 | 6 | 0 | 0 | 2 | 2 | 0 | 0 | 1 |
| 21 | 0 | 46 | 0 | 10 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 58 | 0 | 10 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 |
| 23 | 1 | 29 | 0 | 10 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 24 | 3 | 14 | 0 | 10 | 0 | 1 | 7 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 5 | 13 | 2 | 10 | 2 | 1 | 11 | 0 | 1 | 3 | 0 | 2 | 0 | 5 | 3 | 0 | 0 |
| TOTALS | 29 | 753 | 12 | 770 | 39 | 13 | 125 | 4 |  | 24 | 1 | 2 | 6 | 12 | 6 | 14 | 63 |

*Figure 2.*

the IIGS would also be satisfactory) and given to each pair of children.

Prior to assigning each pair of children a numbered plot for physical examination, the teachers discussed the handling and care of live organisms; a critical step because organism collection would be one of the activity's aspects and the avoidance of cruelty was of utmost importance.

As the map indicates, the habitat included a number of trees, a fallen log, a large rock, a creek, and a bordering fence on the southside. This variety of niches provided a number of different observational opportunities and helped maintain student interest.

Organism record sheets were distributed to the students, who were told to use the illustrations on the record sheets to aid in the identification of plants and animals they would encounter. Instructions were given to place a tally mark beneath the appropriate picture each time a similar organism was found. If organisms were seen that were not on the tally sheet, the students were to tell the teacher, who would then help to identify and record them on a separate sheet of paper.

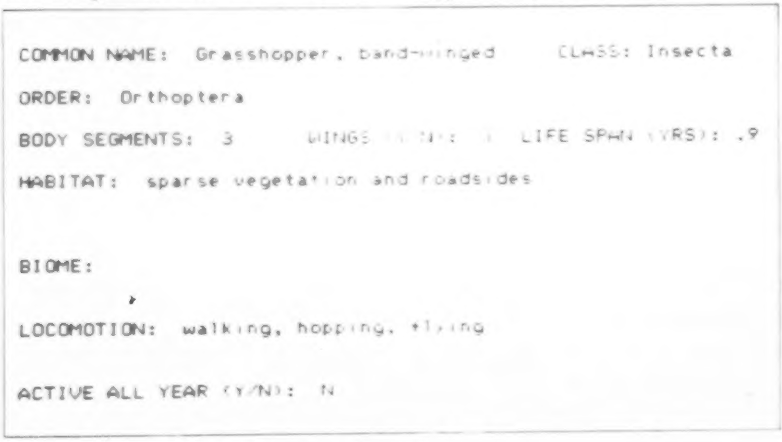
Armed with flower spades, magnifying glasses, and small plastic containers in which to bring back animal specimens for further examination (each to be labeled with the discoverer's name and the section where found), the students avidly explored their respective plots for crickets, grasshoppers, beetles, ants, butterflies, worms, and the variety of plant life that dotted the exploration area. (Every effort was made to leave the area much as it had been found by replacing rocks, refilling holes dug, etc.)

As previously instructed, each pair of students recorded its data on the Organism Record sheet. The next step was to transfer the data to the Population Spreadsheet (figure 2).

As the data in the spreadsheet began to take form, some of the students noticed organism distribution patterns within the mapped area: plots one, two, six and seven seemed to have the largest grasshopper population, while beetles, centipedes, earthworms and isopods appeared to prefer the habitat found in plots seven, 12, 15, 20 and 25. When asked for their rationales, students concluded that beetles, etc., must like wood and shade and grasshoppers must like open, dry, grassy areas. This prompted students to begin to identify features of the habitats where other organisms were found (i.e., snails found in plots 20 and 25, dandelions in plots one through six, etc.).

Students matched observed characteristics with those found in Peterson's *A Field Guide to the Insects.* Then, using the predefined *AppleWorks* data base (see figure 3), they recorded the characteristics of each specimen in their containers. Using *AppleWorks'* search capabilities, their finished data base printouts, and general class discussion, the students were able to identify commonalities among the various species of animals and plants. More importantly for this study, the students learned that through a properly generated data base, a set of observed characteristics can be used to allow the computer to sort for organisms fitting these descriptions.

The building of science vocabulary has long been one of the necessary attributes for success in scientific endeavors. Thus, to augment the children's vocabulary, word-search and crossword software activities were incorporated into the instructional unit (see figure 4). Student pairs were also given class and library time for writing definitions of words found in the word-search activity. The students composed their definitions using the *AppleWorks* word processor. Definitions were read and discussed in class, and the best were displayed on the bulletin board (see figure 5). The definitions were to be used



COMMON NAME: Grasshopper, band-winged     CLASS: Insecta

ORDER: Orthoptera

BODY SEGMENTS: 3     WINGS (Y/N): Y     LIFE SPAN (YRS): .9

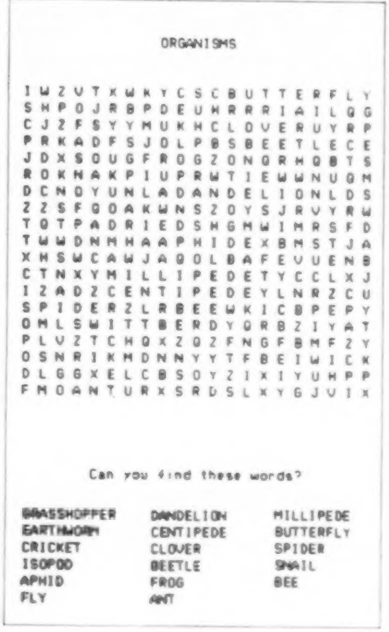
HABITAT: sparse vegetation and roadsides

BIOME:

LOCOMOTION: walking, hopping, flying

ACTIVE ALL YEAR (Y/N): N

*Figure 3.*



```
                     ORGANISMS

I W Z U T K W K Y C S C B U T T E R F L Y
S H P O J R B P D E U H R R R I A I L Q G
C J Z F S Y Y M U K H C L O V E R U Y R P
P R K A D F S J O L P B S B E E T L E C E
J D X S O U G F R O G Z O N Q R H Q B T S
R O K N A K P I U P R W T I E W W N U Q M
D C N O Y U N L A D A N D E L I O N L D S
Z Z S F Q O A K W N S Z O Y S J R V Y R W
T Q T P A D R I E D S H G M W I M R S F D
T W W D N M H A A P H I D E X B M S T J A
X H S W C A W J A Q O L B A F E V U E N B
C T N X Y M I L L I P E D E T Y C C L X J
I Z A D Z C E N T I P E D E Y L N R Z C U
S P I D E R Z L R B E E W K I C B P E P Y
O M L S W I T T B E R D Y Q R B Z I Y A T
P L V Z T C H Q X Z Q Z F N G F B M F Z Y
O S N R I K M D N N Y Y T F B E I W I C K
D L G G X E L C B S O Y Z I X I Y U H P P
F M O A N T U R X S R D S L X Y G J V I X


             Can you find these words?

GRASSHOPPER    DANDELION    MILLIPEDE
EARTHWORM      CENTIPEDE    BUTTERFLY
CRICKET        CLOVER       SPIDER
ISOPOD         BEETLE       SNAIL
APHID          FROG         BEE
FLY            ANT
```

*Figure 4.*

| | Spreadsheet Words and Definitions |
|---|---|
| 01. CRICKET | Black insect related to the grasshopper; males make chirping noises |
| 02. GRASSHOPPER | Insect which flies or hops; often appears in large numbers and destroys crops |
| 03. BEETLE | Insect with forward pair of wings modified as hard sheaths |
| 04. ANT | Insect which lives in colonies, often underground |
| 05. BUTTERFLY | Flying insect with slender body; often with large, brightly colored wings |
| 06. CENTIPEDE | Hundred legs |
| 07. EARTHWORM | Reddish-brown or grayish worm that lives in the soil |
| 08. ISOPOD | Crustacean with a flat, oval body, usually with seven pairs of similar legs |
| 09. APHID | Small insect which extracts juices from plants; also known as ant cows |
| 10. FLY | Common flying insect, common in barnyards, garbage dumps |
| 11. BEE | Flying insect which makes honey |
| 12. FROG | Amphibian which hops; young are called tadpoles |
| 13. SPIDER | Arachnid |
| 14. SNAIL | Considered a delicacy in French cuisine; escargot |
| 15. MILLIPEDE | Thousand legs |
| 16. DANDELION | Prolific plant with yellow flower; considered a major pest in lawns |
| 17. CLOVER | Plant with sweet-smelling white or purple flower; usually has three leaves |

*Figure 5.*

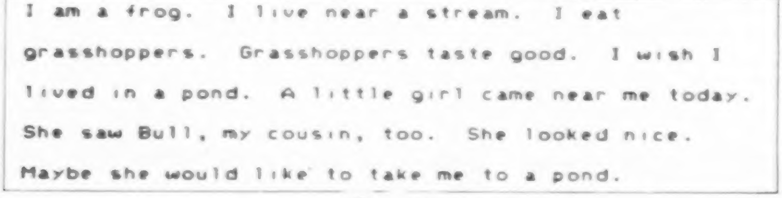
at a later time in creating stories about organisms found during field study.

A follow-up activity to this project included bulletin boards of common species with magazine pictures, data base printouts and student drawings. Examples of organisms not found in their plots, but which still matched the data base criteria, were included on the bulletin boards so that students could identify characteristics of similar organisms living in different areas of the state and/or country.

A summative activity centered around the creation of stories on the *AppleWorks* word processor. Using information from the spreadsheets and data bases and other follow-up activities, the students were told to team up with their partners and create a story about a day in the life of a particular organism of their choice: grasshopper, bird, spider, etc. (see figure 6).

For any study of habitats to be valuable as a learning experience requires more than a one-shot activity. Realizing this, the teachers asked the students how they might go about getting a better picture of the actual organism's habitat. During the discussion several of the students suggested that they could select several different square areas and compare the populations of each. The teachers introduced the concept of sampling to gain a more accurate picture of the habitat. As the discussion continued, a student suggested that they could repeat their study during the fall and winter to gain additional information on how the populations of the habitat changed.

The two participating teachers felt confident that they could replicate this unit using the microcomputer software with a great deal more ease than using pencil and paper. More importantly, they felt that the students' synthesis of the data enabled them to gain insights into understanding organisms and habitats which would have been difficult without the microcomputer and accompanying software. Using all the activities with the microcomputer as a focal point seemed to create a higher interest level in the students than either of these teachers had experienced in the past with other science activities. The teachers were also amazed that software which their school already possessed could be integrated into elementary science instruction with little or no additional expense, the only real requirements being planning and imagination!



I am a frog. I live near a stream. I eat grasshoppers. Grasshoppers taste good. I wish I lived in a pond. A little girl came near me today. She saw Bull, my cousin, too. She looked nice. Maybe she would like to take me to a pond.

*Figure 6.*

As a follow-up to this third grade lesson, the activity has been repeated with a fourth grade class. One of the teachers from the original group participated in the second study. At the conclusion, we concurred that better results and reactions were gained from the older group. While the success at the third grade was splendid, we felt that the vocabulary acumen and general understanding of the concepts were significantly greater at the fourth grade level.

---

*[Dr. A. W. Strickland, Eastern Montana College, Billings, MT 59101.]*

## References

Borror, D. J. & White, R. E. *A Field Guide to the Insects.* Boston, MA: Houghton Mifflin Company, 1970.

Hannah, L. "Social Studies, Spreadsheets and the Quality of Life." *The Computing Teacher,* Dec./Jan. 1985-86, p. 13.

Science Curriculum Improvement Study Teacher's Guide, *Populations Unit,* "Chapter 2: Organisms Around the School." Chicago, IL: Rand-McNally, 1972, pp. 30-32. (Adaptation from SCIS used for science activity.)

# Using NFL Statistics to Teach the Spreadsheet

by
*Martin Miller*

How do we convince high school students who have no need for financial planning that spreadsheets are a valuable and practical software tool? For years I struggled unsuccessfully with my classes, attempting to convince students that budgeting and financial planning were fully as engrossing as the winner of the Monday night football game. Then it occurred to me that there could be a better way: Why not turn one of the students' distractions from the lesson into a way to pull them into that lesson? Considering the wealth of statistics that football games generate, it is immediately apparent that they provide a ready vehicle for spreadsheet instruction.

The football motif provides motivation for students to learn to use spreadsheets. Even students who don't love football enjoy these activities more than budgeting. And since the information being manipulated is interesting, students put more practice time in with their new computer skills.

Teachers who are not football fans can relax: This activity does not require spending every Sunday afternoon and Monday night in front of the television set keeping track of statistics. Every Tuesday's *U.S.A. Today* carries all the stats you'll need to keep your students up to date.

I start this unit by displaying the NFL football statistics for the previous Sunday on the overhead projector. Students begin learning about spreadsheets by entering a week's statistics for each team. They enter the team names in column A, the games won and lost in columns B and C, the total points scored for the season in column D, and the total points scored against that team this season in column E (see Figure 1).

While entering the data, students learn how to place values and labels in a cell, edit a cell, delete a cell, adjust column widths, and save their work.

After students enter the initial data, more creative spreadsheet instruction can begin. Have everyone move their cursors to cell B6 and sort that column from large to small numbers. Now ask the class what is displayed. The answer, of course, is that the teams with the best records are on top. If you do the same thing with column D, you show the teams with the best offense, and with column E the worst defense. To return to the original display, sort on column J, which was serially numbered for this purpose. Now let them discover on their own how to display the worst records, worst offense, and best defense.

The next step involves learning how to use formulas. Explain that cell locations are used in the same manner that variables are used in algebraic formulas. In cell F6, have students enter the formula +D6/B6+C6. This formula will total the number of games played (B6+C6) and divide that into the total points scored (D6). This, of course, will display the average number of points the team scores per game. Have the class enter the appropriate formulas for all the other teams. I wait till later to show them how to replicate a formula. The practice and experience they're gaining now helps them appreciate the function when it is introduced.

Now have students write their own formulas to display the average number of points each team's defense has allowed for each opponent.

In Figure 1, column H contains a formula which subtracts the value in column G from the one in column F. This number represents the average number of points by which a team wins or loses.

Initially, we work on the NFL spreadsheet for several days and then go on to more traditional spreadsheet applications. But each Tuesday we return to the NFL spreadsheet. On a typical Tuesday class, students race to enter the new statistics so they can see where their favorite teams show in the standings. But to do that they must first rearrange the spreadsheet to show the leaders in whatever statistical category they are interested in. You know you are successful when an academic-type student asks an athlete how this is done. The athletes are so jazzed by the topic, they speed ahead of the other students.

As students become more proficient in understanding the uses of the spreadsheet, they can use it for problem solving. One activity I have found to work quite well is to use the spreadsheet to predict which teams will win the upcoming games for the week. First go down the newspaper listings of the upcoming games and number the teams to play each other. If the paper says "Washington vs. Chicago," Washington will be number 1 and Chicago will be number 2. The next two teams will be numbered 3 and 4, and so on. Continue until each team has been assigned its own number. Next, place a list of the teams and their numbers on the overhead projector. Show students that when these numbers are entered into cells on the

**1986 NFL after 7 Games**

| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | 1 |
| 2 | | | | | | | | | | 2 |
| 3 | TEAM | WON | LOST | P.F. | P.A. | AV.F | AV.A | DIFF | | 3 |
| 4 | | | | | | | | | | 4 |
| 5 | | | | | | | | | | 5 |
| 6 | BUFFALO | 2 | 5 | 142 | 148 | 20 | 21 | −1 | | 6 |
| 7 | INDIANAPOLIS | 0 | 7 | 68 | 180 | 10 | 26 | −16 | | 7 |
| 8 | MIAMI | 6 | 1 | 181 | 220 | 26 | 31 | −6 | | 8 |
| 9 | N.Y. JETS | 6 | 1 | 176 | 133 | 25 | 19 | 6 | | 9 |
| 10 | NEW ENGLAND | 4 | 3 | 196 | 112 | 28 | 16 | 12 | | 10 |
| 11 | | | | | | | | | | 11 |
| 12 | CINCINNATI | 5 | 2 | 176 | 192 | 25 | 27 | −2 | | 12 |
| 13 | CLEVELAND | 4 | 3 | 152 | 160 | 22 | 23 | −1 | | 13 |
| 14 | HOUSTON | 1 | 6 | 128 | 150 | 18 | 21 | −3 | | 14 |
| 15 | PITTSBURGH | 1 | 6 | 85 | 183 | 12 | 26 | −14 | | 15 |
| 16 | | | | | | | | | | 16 |
| 17 | DENVER | 6 | 1 | 189 | 101 | 27 | 14 | 13 | | 17 |
| 18 | KANSAS CITY | 4 | 3 | 154 | 152 | 22 | 22 | 0 | | 18 |
| 19 | L.A. RAIDERS | 4 | 3 | 136 | 130 | 18 | 17 | 1 | | 19 |
| 20 | SAN DIEGO | 1 | 6 | 150 | 201 | 21 | 29 | −7 | | 20 |
| 21 | SEATTLE | 5 | 2 | 165 | 100 | 24 | 14 | 9 | | 21 |
| 22 | | | | | | | | | | 22 |
| 23 | DALLAS | 5 | 2 | 189 | 128 | 27 | 18 | 9 | | 23 |
| 24 | N.Y. GIANTS | 5 | 2 | 142 | 90 | 20 | 13 | 7 | | 24 |
| 25 | PHILADELPHIA | 2 | 5 | 98 | 159 | 14 | 23 | −9 | | 25 |
| 26 | ST. LOUIS | 1 | 6 | 97 | 157 | 14 | 22 | −9 | | 26 |
| 27 | WASHINGTON | 6 | 1 | 148 | 115 | 21 | 16 | 5 | | 27 |
| 28 | | | | | | | | | | 28 |
| 29 | CHICAGO | 6 | 1 | 173 | 90 | 25 | 13 | 12 | | 29 |
| 30 | DETROIT | 3 | 4 | 116 | 130 | 17 | 19 | −2 | | 30 |
| 31 | GREEN BAY | 1 | 6 | 91 | 191 | 13 | 27 | −14 | | 31 |
| 32 | MINNESOTA | 5 | 2 | 150 | 91 | 21 | 13 | 8 | | 32 |
| 33 | TAMPA BAY | 1 | 6 | 107 | 191 | 15 | 27 | −12 | | 33 |
| 34 | | | | | | | | | | 34 |
| 35 | ATLANTA | 5 | 1 | 160 | 113 | 27 | 19 | 8 | | 35 |
| 36 | L.A. RAMS | 5 | 2 | 150 | 120 | 21 | 17 | 4 | | 36 |
| 37 | NEW ORLEANS | 3 | 4 | 129 | 122 | 18 | 17 | 1 | | 37 |
| 38 | SAN FRANCISCO | 4 | 2 | 170 | 107 | 28 | 18 | 10 | | 38 |
| 39 | | | | | | | | | | 39 |
| 40 | | | | | | | | | | 40 |

*Figure 1.*

spreadsheet and arranged from smallest to largest, the result is the schedule for the upcoming week, with the home team on the bottom of each pair.

It's now quite easy to determine which team should win the games in this week's schedule. The challenge is to have the *students* come up with formulas that will determine who should win the game, and by how many points. This is done by determining what the theoretical score of the game will be in the following fashion. First, average the points scored by a team with the points allowed by the opposing team, and vice versa. Using Figure 1 as an example and assuming that Buffalo is playing Indianapolis, you would first average cells F6 and G7. This would give you the theoretical number of points that Buffalo would score. Next you average cells F7 and G6 to get the points that Indianapolis should score. Bookies give the home team a three-point advantage, so you should add three points to Indianapolis' predicted score. The score that the spreadsheet will come up with is Buffalo 23, Indianapolis 18.

Now that students have some experience writing and entering formulas, this example provides an excellent time to teach how to copy them. Replicating the formula above for all of the games that will be played that week will immediately show the predicted results for all of the games. This provides instant gratification for mastery of a somewhat complicated task, which should help the students remember how to accomplish it in the future.

The NFL spreadsheet activities provide a highly motivating introduction to using a valuable tool in the classroom, but you needn't stop with the ideas here. Set your kids to work with the team stats and let them find the answers to the questions that most intrigue them. My students and I have worked out several techniques and formulas, and I would be glad to share them with anyone who sends a stamped, self-addressed envelope to me at the address below.

*[Martin Miller, E.C. Glass High School, 2111 Memorial Ave., Lynchburg, VA 24501.]*

# Teach Spreadsheet Proficiency With Personal Money Management Projects

*by*
*Nona Berghaus*

Teachers should use every opportunity to help students develop their abilities in critical thinking and problem solving. By using a spreadsheet, students can compile an accurate and understandable expression of a real-life problem. This type of decision support is invaluable in making wise financial decisions.

In teaching spreadsheets, finding appropriate and motivational projects that are within students' experiences is important. The projects need to be familiar to all students and should introduce one or two fundamental concepts of spreadsheets in a careful, step-by-step manner.

### A Million Dollars to Spend

With an annual median family income of approximately $30,000, and a working life of 40 years, young Americans will easily have more than a million dollars to spend during their lifetimes! Today, millions of Americans work 40 hours a week, 50 weeks a year until they retire, trying to earn as much income as possible.

Young people need to learn how to use their money wisely and to realize that the wise management of money in day-to-day activities can enhance purchasing power just as effectively as an increase in income.

Before using money-management projects effectively, the basic spreadsheet mechanics that need to be introduced are: entering and editing information, saving to and loading from a disk file, knowing the differences among labels, values, cell names and formulas, and understanding that file cells contain the instructions that tell the computer what to calculate and what to display in the screen cells.

I have successfully used the following projects to teach both personal finance and spreadsheets to post-secondary and continuing-education students. These activities can also be adapted for younger students. With an appropriate introduction, most students immediately discern the practicality and the application of these projects to their current financial situation. Formulas that are listed are for the *Lotus 1-2-3* program.

### Comparison Shopping

An exercise that could be meaningful for every student is to prepare a spreadsheet that compares the price at different stores of a list of toiletry items that are used by the student. The sum function is about the only formula needed. To add to a discussion of the effect of inflation on the consumer's pocketbook, the comparison shopping could be completed at intervals of one month. The family's or a hypothetical young couple's grocery list could serve as another comparison shopping list. Students enjoy doing comparison shopping, and when coupled with the recording ease of the spreadsheet's columns and sum function, students become better shoppers and eager microcomputer users.

Another similar activity, which illustrates the usage of templates (a worksheet that contains all necessary formulas and formats but no data), could list all of the income and expenses for the student during a month. Usually the names of the expenses are listed as columnar headings and the days of the month as the row identifiers. At the beginning of each month, the template is retrieved, entries made, and the file is saved under a different month's name. Each month's totals can be transferred to an annual summary worksheet; students readily see the effect of multiplying a small monthly saving for an annual period. If this project would emphasize the inequalities in income, the students could do the first spreadsheet for a hypothetical friend and then adapt the spreadsheet for their own use. The modification of spreadsheets is a common activity for most practitioners.

After students have recorded their income and expenses for several different months and prepared a budget, you can pose the question, "Is the manner in which you are spending your money helping you to achieve your goals?" This discussion will further enhance the students' development of better money management habits.

### Time Management

Many people believe that there is a direct relationship between an individual's management of time and management of money. If a person is habitually late in paying bills, probably that same person is late in keeping appointments and in coming to class. A time grid could easily be entered to a spreadsheet and a student's time schedule listed in a different column for each day. If an integrated program such as *Lotus 1-2-3* is used, another column could be added for coding the activity (sleep, class, games, etc.). The data base extract command and sum function can then provide an enlightening summary of how the time was used.

### Money Growth

Most students have had experience saving, but often do not realize the effect of compound interest over a period of time. An accumulation in an Individual Retirement Account (Figure 1) can show this compounding effect and can be an excellent vehicle to teach relative and absolute (fixed) addressing when copying (replicating) formulas. As $2,000 a year is probably not realistic for students, lesser amounts could be used in place of $2,000 for the annual contribution.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | IRA |
| 2 | RATE | CONTRIB | YEAR | VALUE |
| 3 | 12% | $2,000 | 1 | $2,240 |
| 4 | | $2,000 | 2 | $4,749 |
| 5 | | $2,000 | 3 | $7,559 |
| 6 | | $2,000 | 4 | $10,706 |
| 7 | | $2,000 | 5 | $14,230 |
| 8 | | $2,000 | 6 | $18,178 |
| 9 | | $2,000 | 7 | $22,599 |
| 10 | | $2,000 | 8 | $27,551 |
| 11 | | $2,000 | 9 | $33,097 |
| 12 | | $2,000 | 10 | $39,309 |

*Figure 1. Spreadsheet of IRA Accumulation.*

After the formula (C3+1) is used for the second year and the formula has been copied for the next eight years, the concept of relative addressing can be introduced. The students can easily see how the formula changed as the formula was copied down the column. The formula used to determine the IRA VALUE, (D2+B3)*(1+$A$3), can then be used to explain the need for some absolute addresses. Students could first copy the IRA VALUE formula down the column without using absolute addresses and then a second time with the interest rate cell made absolute. Note: in cell D3, the future value function can be used in place of the IRA VALUE formula @FV(B3,A$3,C3)*(1+A$3); however, a decimal point must be placed in front of the interest rate in cell A3.

This spreadsheet allows students to utilize the "What if . . ." analysis by changing the interest rate or amounts and watching the IRA Value column updating. The difference between simple and compound interest could also be discussed. Students at the high school, college, and continuing-education levels have all expressed astonishment in the amounts accumulated and in the "What if . . ." capabilities of the spreadsheet.

### Credit Costs

Most students dream of owning a car (usually with borrowed money), but really have little knowledge of the difference that one percent in interest or a larger down payment can make in their ability to purchase a car. Most spreadsheet programs include a payment function that can easily specify amount differences. Even more meaningful is an amortization table that describes clearly the amount needed each month to pay the interest, and the total amount of interest paid (Figure 2). The formulas can be copied down for as many years as is desired to check the differences in house payments, a business loan, and so forth.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | COST OF CREDIT | | | |
| 3 | | | | |
| 4 | Amount Borrowed | | | $5,000.00 |
| 5 | Interest Rate | | | 0.12 |
| 6 | Number of years | | | 1 |
| 7 | | | | |
| 8 | Annual Payment | | | $5,600.00 |
| 9 | Monthly Payment | | | $444.24 |
| 10 | | | | |
| 11 | | | | |
| 12 | MONTHLY AMORTIZATION SCHEDULE | | | |
| 13 | | | | |
| 14 | MONTH | PRINCIPAL | INTEREST | BALANCE |
| 15 | 0 | | | 5,000.00 |
| 16 | 1 | 394.24 | 50.00 | 4,605.76 |
| 17 | 2 | 398.19 | 46.06 | 4,207.57 |
| 18 | 3 | 402.17 | 42.08 | 3,805.40 |
| 19 | 4 | 406.19 | 38.05 | 3,399.21 |
| 20 | 5 | 410.25 | 33.99 | 2,988.96 |
| 21 | 6 | 414.35 | 29.89 | 2,574.61 |
| 22 | 7 | 418.50 | 25.75 | 2,156.11 |
| 23 | 8 | 422.68 | 21.56 | 1,733.42 |
| 24 | 9 | 426.91 | 17.33 | 1,306.51 |

*Figure 2. Amortization Spreadsheet.*

The formula at Cell B16 is @IF(D15>1,$D$9-C16,0) ; at Cell C16, @IF(D15>1,+D15*$D$5*1/12,0) ; at Cell D16, @IF(D15>1, +D15-B16,0). The IF statements permit the "Number of Years" to be changed without any resulting negative balances.

This type of problem is another good example of the spreadsheet's power in "What if . . ." analysis. What if the students saves for a larger down payment? What if the student could borrow the money at a lesser rate of interest? What if the car could be paid for in a shorter period of time? All these questions can easily be answered with the above spreadsheet, and underscore the advantages of using this tool.

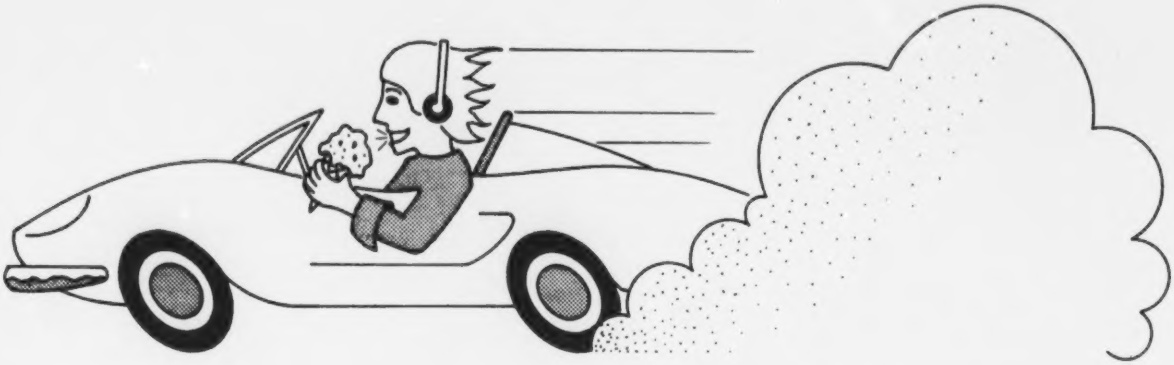
### Conclusion

Instruction in spreadsheets can provide many opportunities for teaching personal money management. Students need guidance in refining both their spreadsheet skills and the information required to solve the financial problems they will meet in the years ahead.

---

*[Nona Berghaus, Professor of Computer Information Systems, Emporia State University, Emporia, KS 66801.]*

# SUPPLEMENT
# DATABASE



# The Data Base: Getting to Know You

***by***
***Larry Hannah***

Here's a good beginning-of-the-year activity to introduce students to the data base and each other at the same time. You start by creating a data base template (and a worksheet) that includes blanks for students to fill in their names and a wide variety of favorite things, such as musical group, pizza topping, female athlete, etc. (see figure 1). Have students pair off and interview their partners, filling in the sheets for each other and then entering the data into the data base.

From here, the data base students have created can be used for a number of activities. Three are outlined below.

### Team Activity

This activity helps students learn to use the Arrange strategy for searching a data base. It's patterned after the TV game show "Family Feud." Even if you or your students haven't seen the show, the rules are easy enough for anyone to follow.

You'll be using the chalkboard; a computer running the "favorites" data base; another computer, with a large monitor, running the "scorekeeper" spreadsheet (figure 2); and some railroad board to make signs for the teams. Figure 3 shows a good way to arrange the classroom for this activity.

#### Setting Up

Have the class count off by threes to create three teams. Give each team a piece of railroad board and a marker and allow them a few minutes to come up with a team name and create a sign. Then determine the order of play: Two groups will be playing while the third serves as judge and does the sorts at the computer. Post the order of play on another piece of railroad board. A member of the judging team will keep score with the spreadsheet on the large monitor, and another will record responses and point values on the chalkboard to keep players from using the same response more than once.

**FAVORITES**

Fill in your last name and first name. After that, list your favorite for each category. After you have finished, you will be entering the answers into a data base on the computer.

Last name: ____________________
First name: ____________________
Musical group: ____________________
Musical instrument: ____________________
Male singer: ____________________
Female singer: ____________________
Song: ____________________
Fast food rest.: ____________________
Food dish: ____________________
Vegetable: ____________________
Fruit: ____________________
Ice cream: ____________________
Pizza topping: ____________________
Sport: ____________________
Male athlete: ____________________
Female athlete: ____________________
School subj. (favorite): ____________________
School subj. (least fav.): ____________________
TV soap opera: ____________________
Car: ____________________
Computer: ____________________
Toothpaste: ____________________
Athletic shoe: ____________________
Designer label: ____________________
Actor: ____________________
Actress: ____________________
Holiday: ____________________
Collection: ____________________
Hobby: ____________________
Zodiac sign: ____________________

*Figure 1.*

|  | A | B | C | D |
|---|---|---|---|---|
| 1 | **Round 1** | Team A | Team B | Team C |
| 2 | Question 1 | 16 | 7 |  |
| 3 | Question 2 | 12 | 14 |  |
| 4 | Question 3 | 9 | 12 |  |
| 5 | Question 4 | 10 | 17 |  |
| 6 | Total for Round 1 | @sum(B2...B5) | @sum(C2...C5) | @sum(D2...D5) |
| 7 |  |  |  |  |
| 8 | **Round 2** | Team A | Team B | Team C |
| 9 | Question 1 |  | 16 | 9 |
| 10 | Question 2 |  | 10 | 7 |
| 11 | Question 3 |  | 8 | 15 |
| 12 | Question 4 |  | 12 | 15 |
| 13 | Total for Round 2 | @sum(B9...B12) | @Sum(C9...C12) | @Sum(D9...D12) |
| 14 |  |  |  |  |
| 15 | **Round 3** | Team A | Team B | Team C |
| 16 | Question 1 | 10 |  | 7 |
| 17 | Question 2 | 10 |  | 11 |
| 18 | Question 3 | 9 |  | 17 |
| 19 | Question 4 | 13 |  | 13 |
| 20 | Total for Round 3 | @Sum(B16...B19) | @Sum(C16...C19) | @Sum(D16...D19) |
| 21 |  |  |  |  |
| 22 | Grand Total | +B6+B13+B20 | +C6+C13+C20 | +D6+D13+D20 |

*Figure 2.*

*This spreadsheet template shows sample scores along with the formulas needed to sum them.*

**Playing the Game**

Play begins when the emcee (teacher) poses a question, such as "Name a fast food restaurant." The first team to answer gains control of the board, and four team members (including the one who first answered) will have the opportunity to give answers. Each time an answer is given, the judging team arranges the data base to find how many students gave that response on their questionnaires. That number of points is then awarded to the team.

The answers and their point totals are recorded on the board, and the points are also recorded on the spreadsheet. Then the second team has a chance to give four responses to the same question. None of the answers may be repeated.

Any disputes over student responses will be settled by the judging team. That team will also ask for a more specific answer when required.

Continue this way until the teams have answered four questions, then rotate the teams among playing and judging. Eventually each team will have played two games, one against each of the other teams. The team which has stacked up the most points wins, technically. But each student comes out a winner, having learned to sort and arrange data base information.

### Individual Activity

With this activity students will learn to use the Find strategy.

Have each student identify his/her favorites for three categories on a worksheet (see figure 4 on page 41). Then send students to the computer, worksheet in hand, to find those who chose the same favorites. Next have them write down the names of kids who shared the same favorite under each category and look through their lists to find someone who shared all three favorites. (If there is no match, have them find someone who chose two of the same.) Then have them locate that student in the classroom to sign the bottom of their worksheet. This way kids will meet others who share some of their interests; information that they may never have known about otherwise.

### Record Selection Activity

Make up a worksheet which poses questions that will require students to use the Record Selection strategy. Here are some samples from my class:

- One person chose The Police as the favorite musical group. What is that person's favorite musical instrument?
- Who would be delighted if Carl's Jr. served fried shrimp?
- He came roaring down the street in his Ferrari, listening to David Lee Roth and eating maple ice cream. What toothpaste had he used to get those teeth so bright?

I include all students in this activity by making each of their names appear in the searches. The activity is fun for everyone and gives a lot of practice in record selection.

Try these activities in your classroom. They help kids identify others who share interests, and they introduce data bases in a fun way.

---

*[Larry Hannah, California State University-Sacramento, School of Education, 6000 "J" St., Sacramento, CA 95819.]*

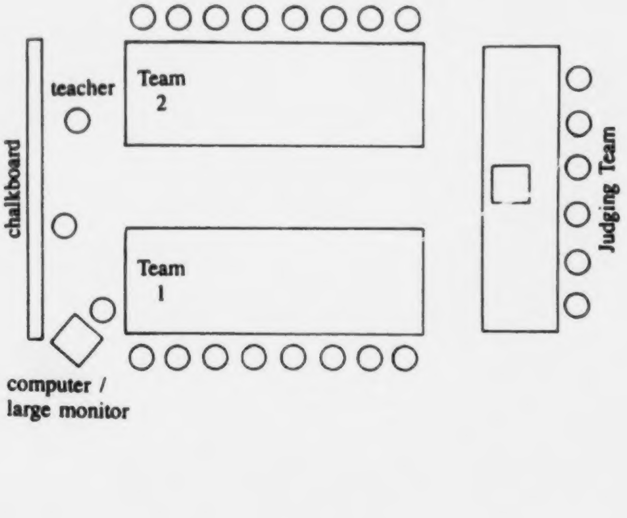


*Figure 3.*

## INDIVIDUAL ACTIVITY

Name: ______________________

Choose three categories from the list. Sort through those categories to find people who listed the same favorites for each of those three, then compare to find a person who shares all three favorites. If no one shares all three, find one who shares two. After you have found that person, have her/him sign this form at the bottom.

Category 1: ______________________

Your Response: ______________________

People who shared that response:

______________ ______________

______________ ______________

______________ ______________

Category 2: ______________________

Your Response: ______________________

People who shared that response:

______________ ______________

______________ ______________

______________ ______________

Category 3: ______________________

Your Response: ______________________

People who shared that response:

______________ ______________

______________ ______________

______________ ______________

Name of person who shared two or three: ______________________

Signed: ______________________

*Figure 4.*

*The Computing Teacher, Volume 12, Number 8*

# Problem Solving with Data Bases

***by***
***Beverly Hunter***

© 1985 Targeted Learning Corporation

Lynn and Joey have been learning in history class about Ben Franklin's experiments with electricity. Their teacher has challenged them to find out some of the earliest inventions that used electricity.

"Let's find all the inventions made before 1900," Joey says.

"Too many," replies Lynn.

"Let's find all inventions made before 1900 that used electricity," Joey suggests.

"Yeah. But there might be a lot of them. Let's print a list."

"OK. Just print names of the inventions."

"No. We need dates to know the *earliest* inventions."

"Let's print the dates and sort them by year. Then the earliest inventions will be at the top of the list."

This problem-solving session soon produces a printed list of inventions similar to that shown in figure 1. Lynn and Joey have been using a data management program and a file of information on the subject of inventions. They use the information in the file to solve problems, identify historical trends and relationships, test hypotheses, and learn some techniques for managing information stored in computer-readable form.

## What Is a Data Management Program?

The terms "data management program," "data base management system," "filing system" and "file management program" are all used to denote computer programs that enable you to design, build and use collections of information. These collections of information are called files, data files or data bases.

A file or data base is an organized collection of information on a particular subject. A telephone book, a collection of report cards, a class roster, a table of population statistics in an almanac, a library card catalog—these are all familiar kinds of files or data bases we all work with every day on paper. But these are static files—you have no control over the way in which the data are organized. Imagine trying to find all the hardware stores in your town just by using the white pages of the phone book.

A data management program makes it easy for you to use a personal computer to store, update, organize and retrieve information from data files. An important characteristic of such programs is that they are ***general-purpose*** tools. The same program can be used to create and use files on subjects as diverse as fish, student grades, cafeteria menus, countries of the world, poets, pets or paper route customers.

> ***"The same data management program can be used to create and use files on subjects as diverse as fish, student grades, cafeteria menus, countries of the world, poets, pets or paper route customers."***

```
INVENTIONS USING ELECTRICITY
Lightning Rod  1752
Benjamin Franklin
Electric Battery  1796
Alessandro Volta
Electromagnet  1824
Joseph Henry
Morse Code  1837
Samuel Morse
Telegraph  1844
Samuel Morse
Electric Vote Counter  1868
Thomas A. Edison
Stock Ticker  1869
Thomas A. Edison
Telephone  1876
Alexander Graham Bell
Microphone  1878
Thomas A. Edison
Incandescent Lamp (Light Bulb)  1879
Thomas A. Edison
Tabulating Machine  1884
Herman Hollerith
Radio  1896
Guglielmo Marconi
```

*Figure 1.*
*Lynn and Joey's printout of inventions before 1900 that depended on electricity, sorted by year of invention.*

## Why Teachers and Students Use Data Bases

Here are a few examples of different purposes for using computer data bases and data management software:

- **Discovering commonalities and differences among groups of events or things.** For example, what are the differences between states that have grown rapidly in population in the past decade versus states that have declined in population? What are the common properties of gasses?
- **Analyzing relationships.** For example, is there a relationship between the distance of planets from the sun and their period of revolution?
- **Looking for trends.** Trace the patterns of change in birthrates in a specific country over the past century. Look for trends in size of households in a country and relate those trends to other demographic factors.
- **Testing and refining hypotheses.** Test the common hypothesis that "good electrical conductors are also good heat conductors" by asking the FILE program to find all the elements that meet each of these criteria separately, and then both of the criteria combined. Are the results surprising? Try a different hypothesis.
- **Organizing and sharing information.** Put the results of your library research about a U.S. president on a data file. If all members of the class store their president's information on the same file, the whole class now has one organized collection of information to use when they want to learn more about any particular president or any group of presidents.
- **Keeping lists up-to-date.** Put names, phone numbers and skills of your club members in a file. As new people join and old members leave, update the file and print out new membership lists.
- **Arranging information in more useful ways.** From a file of data about students, print out a list organized by homeroom, another list organized by bus route, and one of just the band members.

```
                      INVENTIONS & TECHNOLOGY
INVENTION: Hot-Air Balloon
YEAR: 1783                                       TYPE: Transportation
DESCRIPTION: A lighter-than-air craft used for flight which consisted
of an impermeable bag filled with hot air.
IMPACT: Resulted in the first manned balloon flight in 1783. Hot-air
balloons are still used today for fun and sport.

                    PRESS CTRL-N TO SEE PAGE 2

INVENTOR: Joseph M. Montgolfier
BORN: 1740                    DIED: 1810                      SEX: M
NATIONAL ORIGIN: France
NEED FOR INVENTION: Need for an improved balloon design.
ENABLING TECHNOLOGY:
—Leonardo da Vinci was first to speculate about flight
—Previous balloon designs
—Montgolfier got the idea of hot air after watching smoke in chimneys

              PRESS CTRL-N FOR REFS; CTRL-P FOR PAGE 1

REFERENCES:
—Encyclopedia Americana, 1980
  Vol. 3
—Collier's Encyclopedia, 1983
  Vol. 16
-------------------------------
NOTE: Jacques Etienne Montgolfier was co-inventor with his brother
```

*Figure 2.*
*Sample invention in the Inventions file.*

## Example Files

Special terms used in talking about data bases are best learned by looking at examples. Figures 2, 3, 4 and 5 show sample portions of four different data files designed and built for students in history, government, physical science and life science. These are from a collection of 24 different files developed by Hunter and Furlong (1,2) and McLeod and Hunter (3,4). Other examples, with lesson plans, are given in *My Students Use Computers* (5).

The files are very different from one another, because each file is designed for a particular set of instructional purposes.

The Inventions file (figure 2) enables students to trace the development of inventions and technology in different fields such as agriculture, textiles, information processing, home/leisure, etc. At this time, there are about 170 different inventions in the file. Of course, students and teachers can add more inventions to the file.

All the information about one invention and its inventor, such as the hot-air balloon shown in figure 2, is on one *record* of the data file. In some data management programs the term used for record is *form.* Within each record or form there are separate ***fields*** or ***data items.*** In figure 2, the data item names are in all upper case letters. YEAR: is a field name. 1783 is the data item for YEAR.

```
                     PRESIDENTIAL ELECTIONS
YEAR: 1984
                  Political Parties and Candidates
REPUBLICAN: Ronald Reagan
  DEMOCRAT: Walter Mondale
 3RDPARTY1:
 3RDPARTY2:
                      Electoral Vote Results
REPUBLICAN: 525
  DEMOCRAT: 13
 3RDPARTY1:
 3RDPARTY2:
                         Popular Vote Results
REPUBLICAN:              53,428,357  %: 58
  DEMOCRAT:              36,930,923  %: 41
 3RDPARTY1:                          %:
 3RDPARTY2:                          %:
                                           WINNER: Reagan (R)
```

*Figure 3.*
*Part of the election form.*

All the records in one file have the same fields. The NAME of the invention, the YEAR, a TYPE descriptor, a brief paragraph DESCRIPTION of the invention, a paragraph telling the IMPACT of that invention, etc., are included for every invention in the Inventions file.

Figure 3 shows part of a record (form) for the Election file. The actual form has four times this much information in it. Data for each presidential election year since 1789 is on a separate form. The Election file is designed to encourage students to investigate trends in voter participation, development of political parties, campaign financing, campaign issues and congressional elections.

The Common Substances file (figure 4 shows part of a sample form) is designed to encourage children to investigate and become familiar with properties (such as melting point, density, color, etc.) of common substances such as ammonia, brass, chalk, coal, concrete, ice, iron, paper, sugar or wood. They use the file to solve problems such as, "Which kinds of wood will sink in alcohol, but float in water?"

```
                PROPERTIES OF COMMON SUBSTANCES
COMMON NAME: Iron
ELEMENT, COMPOUND, OR MIXTURE: Element
           DENSITY (XX.XXXX): 07.8600 (g/ml)
   BOILING PT.—C (XXXX.XX): 2750.00
   MELTING PT.—C (XXXX.XX): 1535.00
COLOR: Gray
ODOR: Odorless
SOLVENT (OTHER THAN WATER): Acids
SOLUBILITY IN COLD WATER—G/L (XX.XXX): Insoluble
```

*Figure 4.*
*Part of the Common Substance file record for iron.*

Figure 5 shows part of a sample form on the subject of animals. The Animals file is designed to encourage students to explore many different characteristics of animals—to compare and contrast similarities and differences among animals of different classes, habitats, size or food type. Students can, of course, add more animals to the file. At the present time there are 135 animals in the file covering eight classifications, with about 40 different data items for each animal. This file takes up about 60 percent of the capacity of one Apple II floppy disk.

```
                ANIMALS
COMMON NAME: Horse
CLASS: Mammalia
SCIENTIFIC NAME: Equus caballus
WEIGHT IN KG. (XXXXXX.XX): 000453.92
LIFE SPAN IN YRS. (XXX): 035
HABITAT: Terrestrial
BIOME: Domestic
INTEGUMENT: Hair
ACTIVE ALL YEAR (Y/N): Yes
LOCOMOTION: Walking
```

*Figure 5.*
*Part of the Animals file record for horse.*

## Stages of Learning with Data Bases

Students can develop their data management skills in three prospective stages:

| | |
|---|---|
| **Stage 1:**<br>**USING** | Students use data files that have been created by someone else, e.g., the files shown in figures 2-5. They use the data to test hypotheses, discover relationships, identify commonalities, look for trends, help solve problems, organize reports or investigate new subjects. |
| **Stage 2:**<br>**BUILDING** | Students build a file designed for them; that is, they are provided with a form or record that has already been designed and tested by the teacher or someone else. Such a blank form is sometimes called a ***template.*** With the teacher's help, students plan the research, identify sources of information, gather data, check it for accuracy, enter the data into the computer, and then use the file in their studies. |
| **Stage 3:**<br>**DESIGNING** | Students plan, design, build and use their own data files. |

This progression is suggested because when you ***use*** a variety of data files you learn many concepts and skills that are useful later in building files. For example, recall the TYPE data item in the Inventions file. Through experience in using TYPE to retrieve information about selected types of inventions, students learn the importance of using standardized descriptors for their data. For example, if you want to look at all the Agriculture inventions, you don't want a mixture of "farming," "farms," "agriculture" and "food-growing" descriptors in the file. This concept is essential when students gather data to build their own files, because they must set up and apply a standard way of describing things for their own data bases.

Similarly, when you **build** files you learn concepts and skills needed in designing files. For example, when students gather the data for their own file they discover that different reference sources provide data in different forms. One science book might give temperature information in centigrade units, for example, while another might give the same information in Fahrenheit. Or one reference book might give populations in millions, while another provides them in hundred thousands. When designing a file, you need to first find out the form of your source data.

### STAGE 1: USING DATA FILES

The following sample activities illustrate a sequence in which students become increasingly more proficient in their use of a data file, as well as becoming increasingly more familiar with a particular subject they're studying in history class. The example activities are based on the Inventions file mentioned earlier. Students use this file with the data management program called *PFS:FILE* (Software Publishing Company). However, the instructional purposes and scope and sequence of activities are applicable to the use of any data management program suitable for children.

#### Activity 1: Exploring a Data Base

When students (or people in general) start to use a data file that is new to them, the first thing they need to do is to explore the file—to discover what data are in the file and how the data are organized. This is similar to the way you might flip through

COMMUNICATIONS INVENTIONS

| YEAR | INVENTION | IMPACT |
|---|---|---|
| 1876 | Telephone | Allowed for a global network to convey sound. Local, long-distance and overseas telephones reach 96% of the places in the world. |
| 1878 | Microphone | The microphone is the foundation for much of the audio communication field. It is still used widely today. |
| 1894 | Motion Pictures | After refinements, led to the motion picture or movie industry. |
| 1896 | Radio | Made it possible for the first time to communicate a message instantly to thousands or millions of people at the same time, over long distances. |
| 1904 | Vacuum Tube | The vacuum tube was the foundation for electronics for 40 years. It has been almost completely replaced by the transistor, except in certain special-purpose applications, such as picture tubes in TVs. |
| 1923 | Television | Made it possible for the first time to communicate pictures and scenes to thousands or millions of people. Most effective means of communication ever devised—"the eyes and ears of the world." Force for education, enculturation, political persuasion and merchandising. |
| 1937 | Xerography | First xerographic copier was marketed by the Xerox Corporation in 1960 and has since grown at an astonishing rate. Completely replaced the need for retyping a document, thus saving time and labor. |
| 1948 | Transistor | It has supplanted the vacuum tube in electronic equipment. Transistors are used in radios, TVs, computers, hearing aids, etc. They revolutionized the development of the computer. |
| 1956 | Videotape Recorder | Provides good storage of program material and an advantage over film. Used extensively to tape programs for rebroadcasting later. Also used for instant replay. |
| 1962 | Satellite Communications | Communication satellites provide a major part of the world's global communications. They allow instantaneous transmittal of information and pictures. |

*Figure 7.*
*Second attempt at getting communications information.*

## STAGE 2: BUILDING FILES

After students know how to use data files, they will want to learn how to create their own. When students build their own files, they learn and apply skills such as:

- Analyzing the problem to be researched
- Planning their research
- Locating sources of data
- Gathering data
- Categorizing events
- Ensuring accuracy of data
- Organizing data
- Entering data into a computer

Creating files can be a class project, where each student or pair of students gathers and enters some of the data into the computer file. The end result is a file that everyone can use.

### Examples of Files Students Have Built

- **American Presidents**
  Ten pairs of students each do library research on four U.S. presidents. They gather the data, organize it on paper, check each other's work for accuracy, key the data into the computer, and before they know it the whole class has created a complete data base of information on presidents. The information is then all there, in an organized and accessible form, for anyone to use in future writing assignments.
- **Local History**
  Students gather information from community members, local libraries and historical societies, and create an organized reference source on the history of their own town or city's events, places and people. Some classes donate their files to the local library for others to use and update.
- **Community Service**
  Students help local community service agencies by creating files of information about their services, service areas, resources, who they serve, how to contact them, and other needed information.
- **Countries of the World**
  Four sixth grade classes each choose a continent and build a file of data on each country in their continent. The file can be used to compare countries and continents in terms of factors such as natural resources, education levels, and per capita income.
- **Science Labs**
  Students organize and interpret the results of their laboratory experiments by building and using data files. They compare findings by having all students' results in the same file format.

## STAGE 3: DESIGNING FILES

Since the design of a file must take into account how the file will be used and how the original data will be gathered, students' experiences in Stages 1 and 2 provide them with important enabling skills for Stage 3.

When students work together in small groups to design their own files, they develop and apply skills involved in:

- Project planning and small-group decision making;
- Problem analysis and interviewing;
- File design, including content, format, screen layout, etc.;
- Testing, debugging and revising;

a new textbook to see what topics are covered and how the material is organized. The specific techniques for doing this exploring on the computer depend on the data management software program you are using, how familiar the students already are with the subject matter, and how familiar the students already are with the data management program.

Activity 1 assumes students know very little about the subject matter and nothing about how to use the data management program. Students are taught to ***browse*** through a data base that is new to them. As they browse, point out various features of the data base, and have them take notes on certain facts and ideas that they notice. For example, the Inventions file has a data item called TYPE—have students take notes on the different TYPEs of inventions they see as they browse (agriculture, textiles, communications, etc.).

During this "exploring" activity, explain any new terms and concepts. For example, the Inventions file (figure 2) contains a data item called ENABLING TECHNOLOGY. It can be explained in this way: When a person invents something, s/he depends on other existing inventions. For example, you couldn't invent a wagon if wheels hadn't already been invented. The fact that you already have wheels ***enables*** you to invent the wagon. Wheels are an "enabling technology" for the invention of the wagon.

This exploring activity can be introduced in different ways. One way is for the teacher to demonstrate the exploration to the whole class or a small group. Throughout the demonstration there can be class discussion to ensure that all students understand the concepts and terms used in the file. Another way is to have students work in pairs at the computer. Prepared written lessons may be helpful for students to follow as they do their exploring on the computer. As they go through the lessons they can be instructed to take notes on some of their observations.

### Activity 2: Asking Questions

After students are somewhat familiar with the content and organization of the data file, teach them how to use the data and the data management program to answer questions. The exact details depend upon the particular data management program used, and the way the particular data file is organized.

Begin by asking a question you're pretty sure students are familiar with, or have already been studying in class. For example, using the Inventions file, you can begin by asking students to discover Thomas Edison's inventions. Using the *PFS:FILE* program this is a very simple task: With the blank form on the screen, you simply type "..Edison" beside INVENTOR:. The .. before Edison is a way of avoiding the question of how to spell his first name or whether he has a middle initial. As soon as you type "..Edison" and press a key that tells the program to continue, one of Edison's inventions appears on the screen.

As this activity continues, ask progressively more sophisticated questions; that is, questions that require either more complex retrieval techniques or more complex interpretations from the data. For example, help students to narrow their search to focus on important inventions in the textile industry in the 18th century. (Find all textile TYPE inventions invented between 1700 and 1800.)

Above all, encourage students to experiment, to try things out, to discover limitations of the data base, to find questions that will stump their partner.

***"There are some advantages to having only one or two computers available for the class—students waiting to use the computer have more time to plan and document their approach to solving the problem."***

### Activity 3: Defining Your Information Needs

After students are familiar with the data base and know how to retrieve selected information from it, they can learn to apply these skills in solving problems. The purpose of Activity 3 is to get students to define the information they will need in order to answer a question or solve a problem. Try to word the problem statement in such a manner that there is no single "right" way to go about solving it. For example, students might be asked to identify a single invention or group of inventions that make possible today's instantaneous worldwide communications capabilities, and to provide data to support their argument. There are many ways to go about analyzing this question using the Inventions data base. Some students may use the information on impact of inventions, while others may look for enabling technologies that are common to many recent communications inventions.

Encourage students to break the problem down into smaller problems or questions, and write the questions in their own words.

Students can work in pairs at their desks as they plan the information needed to answer the question. There are some advantages to having only one or two computers available for the class—students waiting to use the computer have more time to plan and document their approach to solving the problem.

Worksheets are beneficial in helping students plan the information they will get from the file to help answer the question or solve the problem. They need to decide how they will search for the particular data needed, what data items from the file should be printed out, what order the list of data should be printed in, and other details about the formatting of the list.

After students have planned their printouts, they can go to the computer and use the data management program to get the data they have planned.

### Activity 4: Interpreting and Debugging

Whether you're a fifth grader studying history, an economist working for the Federal Reserve Board, or a businessperson making a business decision, ***you never get exactly the right information you need to solve a problem in your first attempt.*** In Activity 4, students examine the printout of information they have obtained to analyze how well it helps them answer their question or solve their problem.

***"Whether you're a fifth grader studying history or an economist working for the Federal Reserve Board, you never get exactly the right information you need to solve a problem in your first attempt."***

Figure 6 shows one student's first attempt at getting a printout of information to help answer the question about communications inventions. It very nicely lists communications inventions in order by year. However, it doesn't provide the information needed on either the impact of the inventions or the enabling technologies. The student minimally needs the information about the IMPACT: of the invention in order to understand how a particular invention affected our ability to communicate.

Again students can work in pairs at their desks, interpreting their printouts and trying to use the information to answer their questions. Usually they need to go back and get at least one more printout before they have what they need. Figure 7 shows a second attempt, this time including the information about impact of the inventions.

Encourage students to continue analyzing their printouts and gathering more information until they are able to interpret the data in a way that enables them to answer the question or refine their original hypothesis.

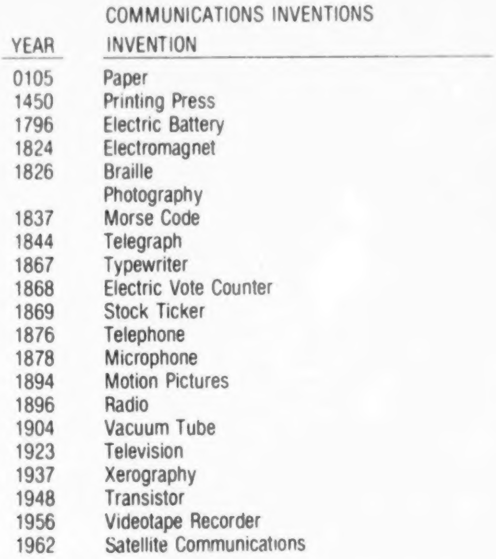
**Activity 5: Updating the File**

A wonderful characteristic of computerized data files is their updatability. Unlike a textbook, reference book or other printed material, a computer data file is very easily modified to suit your particular needs. For example, suppose you want your students to learn more about inventions related to use of energy sources such as coal, oil, solar, wind or atomic energy. Students can research inventions such as the waterwheel, turbine generator, windmill, solar furnace, nuclear reactor, etc. Each pair of students can gather information on one invention and add the data to the Inventions file. The whole class then has a richer collection of information on energy-related inventions to use in their studies.

**Activity 6: Projects**

After students have been led step-by-step through the first five activities, they should be ready to proceed on their own to use the file for a project. Ideally their project will result in a useful product for other students, the school or neighborhood community. Here are some example student projects using the Inventions file:

1. Prepare a chronological list of inventions in a subject area such as Information Processing or Agriculture. Show the enabling technology for the inventions on your printout. Analyze the relationships between the enabling technologies and the inventions they made possible.
2. Impact of inventions. Prepare a chronological list of inventions of a particular TYPE such as home/leisure or transportation. Include in your list the IMPACT data. Then interview some older people (the older the better), and ask them for their opinion as to how these inventions changed their lives or the lives of others. Can you summarize this information by selecting three inventions that have had the greatest impact on people or society?
3. Inventors. Prepare a list of inventors, grouped by nationality. Do you see any patterns in the types of inventions made by people from a certain nation? Do you see any patterns in the dates of the inventions that came from certain countries?
4. The effects of war. Find out the years of wars such as World War I or World War II. Look at the inventions made during those periods. Did the wars affect the kinds of inventions made?
5. Clustering of inventions. Examine a chronological list of inventions. Do you see any periods of time when there were a lot of inventions or a collection of related inventions? Find out more about those periods of history and see whether you can find a reason for this. Is it related to the enabling technology that was present?



```
         COMMUNICATIONS INVENTIONS
YEAR     INVENTION

0105     Paper
1450     Printing Press
1796     Electric Battery
1824     Electromagnet
1826     Braille
         Photography
1837     Morse Code
1844     Telegraph
1867     Typewriter
1868     Electric Vote Counter
1869     Stock Ticker
1876     Telephone
1878     Microphone
1894     Motion Pictures
1896     Radio
1904     Vacuum Tube
1923     Television
1937     Xerography
1948     Transistor
1956     Videotape Recorder
1962     Satellite Communications
```

*Figure 6.*
*Student's first attempt at getting information to answer the communications question.*

6. Prepare a list of inventions that improved travel by land. What is the most recent invention in the file related to land travel?
7. Trace the development of guns over time. What was the first gun invented and when? Show that guns have become more powerful over time.
8. Many inventions became possible only after people learned how to turn oil into products such as gasoline and diesel fuel. Which inventions depended on oil refining and when were they invented?
9. What inventions contributed to the early Industrial Revolution in England in the 18th century?
10. In what ways did the invention of the steam engine and the refrigerator change the ways we prepare, distribute and use food?

- Data gathering and data entry; and
- Using files.

## How to Select Data Management Tools for the Classroom

There are hundreds of different data management programs available on the market for most personal computers. Better ones are being created every day. Here are some of the characteristics to look for in choosing a data management tool for students to use in science, social studies, language arts and other school curriculum areas:

1. **Ease of learning.** It is important that teachers and students be able to concentrate on the subject at hand and can manage their own information. The technical details of using the program shouldn't get in the way. A teacher who is concerned about teaching history doesn't want to spend two weeks teaching how to use the software before students can access the history information. Students should be able to begin retrieving selected information from a file after just a few minutes' orientation to the software and the data file.

2. **Ease of use.** Students shouldn't have to memorize a lot of computer commands or wade through complicated menu sequences. Be willing to give up some fancy features in exchange for simplicity of operation.

3. **Flexible formats for data.** Teachers and students need to be able to experiment with many different kinds of data files for many different purposes. The example files shown in figures 2-5 are quite different. Some have a lot of text, while others are primarily statistical data. The program should be flexible in accepting a wide range of file information, from one-digit code to a long paragraph of text, without restrictions on length, type or number of entries (fields) in a record. Many data management programs can be eliminated from consideration on this factor alone.

   There are now data management programs for the Macintosh (e.g., *Filevision* and *MicroSoft File*) which enable you to have pictorial data items as well as text and numbers. In the Inventions file, for example, we could have included drawings of the inventions or pictures of the inventors. When hardware and software with this capability are available in schools, it will greatly enhance the value of data bases for learning.

4. **Flexibility in naming data items.** It is important for students to learn to communicate ideas and information clearly and accurately. They shouldn't have to work with obscure or cryptic codes for data items. The program should say, "Number of games won this year," not "#GW" or even "#GAMWON." Programs that restrict data item names to a limited number of characters are undesirable.

5. **Files of meaningful size.** Students need—and like—to work with real data files, not "pretend" files. This means, at the present time, that a single file should be able to contain at least one disk's worth of information. For example, our Inventions file contains three pages of information on each of about 170 inventions, and takes up almost an entire Apple II disk. Thus, especially for files with a lot of text in them, choose programs in which the files are on disk while you work with them (e.g., *PFS:FILE*), rather than in the more limited memory of the computer (e.g., *AppleWorks*).

   The cost of large storage devices is dropping quickly, so in planning for students' use of data bases, be prepared to take advantage of much larger data base storage capability than most classrooms have at the moment. Clearly a file containing thousands of inventions, rather than the 200 or so in our example, would make possible a much richer array of problem-solving activities.

6. **Ease of manipulation and retrieval.** Students need to be able to very easily retrieve from the file a particular piece of information or collection of information that meets specified criteria (e.g., "All the presidents who were born in Virginia" or "all Republican presidents who were elected before 1890").

7. **Control over the way information is presented.** Students need practice in preparing information in a way that communicates effectively. They should be able to tell the program to print the selected information in the form of a graph, chart, table or list, sorted alphabetically or numerically.

## Less Important Features

In exchange for ease of learning, ease of use and flexibility of format, certain capabilities in a data management program may be sacrificed at present. Speed of retrieval and sorting, for example, are less important for our purposes than they might be in a business office. Some of the more powerful data entry features such as ability of the program to compute entries or automatically verify accuracy of data formats may also be eliminated in the trade-off for ease of use.

## Summary

Opportunities for student inquiry, problem solving and skill development with data bases are endless, and we are just beginning to explore the pedagogical, curricular and technical issues involved in exploiting the capabilities of computers for these purposes. The hardware and software tools to use are available now, and are improving rapidly.

---

*[Beverly Hunter, President, Targeted Learning Corporation, Amissville, VA 22002.]*

### References

1. Hunter, B. & M. Furlong, *Scholastic PFS: Curriculum Data Bases for U.S. History*. New York: Scholastic, Inc., 1985.
2. Hunter, B. & M. Furlong, *Scholastic PFS: Curriculum Data Bases for U.S. Government*. New York: Scholastic, Inc., 1985.
3. McLeod, R. & B. Hunter. *Scholastic PFS: Curriculum Data Bases for Physical Science*. New York: Scholastic, Inc., 1985.
4. McLeod, R. & B. Hunter. *Scholastic PFS: Curriculum Data Bases for Life Science*. New York: Scholastic, Inc., 1985.
5. Hunter, B. *My Students Use Computers*. Reston, 1983.

# Teaching Data Base Search Strategies

*by*
*Larry Hannah*

It is tough finding ways to get students to probe into content, ask critical questions, and test their conclusions. But data base activities have the potential to aid students in developing these higher-level thinking skills. They can provide opportunities for students to analyze data, develop theories and evaluate their ideas. These skills can be involved in *creating* a data base—deciding what categories to include, researching the data for each category, resolving conflicts between sources, etc. But a wealth of opportunity for developing creativity as well as analysis, synthesis and evaluation skills lies in *searching* a data base that students have created or that has been provided to them.

For students to be successful at activities that involve searching a data base, they need to know the types of searches available for the data base they are using, and they need to know which search strategy is most effective for a particular type of question. I have found that if you don't systematically guide students to analyze the question and consider each strategy, they will find one strategy that works for them and then use it no matter what question comes before them. Allowing this leaves thinking at lower levels and frequently leads to incorrect conclusions. Training students to focus on data base search strategies will help them to learn more about the content they are studying as well as to become better and more critical thinkers.

The three basic search strategies are: **arranging** the records based on the content of any one category (field); **finding** all records that contain a specified word or phrase; and **selecting** all records that meet a specified set of criteria.

Here are some sample searches using a data base on U.S. presidents and vice-presidents:

- Students can **arrange** all records chronologically based on the year the president went into office. With the records arranged in this fashion, it is easy to see the introduction, progression and change of political parties.
- Students can **find** all records that contain the phrase "cal" when they are seeking to identify presidents or vice-presidents from California. (They also get records containing *Cal*vin Coolidge and John C. *Cal*houn.)
- They can **select** all records in which the president's party is "Dem" and the president's prior job was "general." While students could have arranged the data by party or found the records that contained "general," the record selection strategy eliminates Democratic presidents who hadn't been generals and all Republican generals.

## Classroom Activities

I have used the following activities with students as young as the sixth grade. They are appropriate for fifth grade through high school. The activities assume access to a lab where the ratio of students to computers is two or three to one. The worksheets have been designed for the *AppleWorks* data base, but may be adapted for others.

Introduce arrange and find strategies using the presidents and vice presidents data base on page 17. Give students a printed copy of the data base so they don't have to guess at abbreviations. Use the worksheet on page 22 for introducing the arrange and find strategies. Have students complete DB Worksheet I on page 51. You may wish to use the worksheets in figure 1 as overhead transparencies. I find them useful when discussing the various strategies. They can also help students plan their searches and serve as records of what they did in case it's necessary to trace an error.

After students have completed the worksheets, guide them through the questions in figure 2 for practice. After each question is presented and students have found their answers:

- Ask for answers and strategies used.
- Check to see if different students solved the question using different strategies.
- Discuss strategies.
- Compare to see which strategy gives the most "exclusive" answer.
- Check for accuracy using the printed copy.
- Did incorrect answers crop up that could be traced to the strategy? (e.g., no Democratic presidents because the abbreviation was "dem" rather than "demo" or "democrat."
- If unanticipated answers appear (e.g., Calvin Coolidge when seeking California presidents), check to see why these were selected. (This will happen most frequently with find.)

Now introduce record selection using the worksheets beginning on page 23. Have students complete DB Worksheet II on page 51. Venn diagrams, such as those in figure 3, help students understand the record selection strategy.

After students have completed the worksheets, repeat the oral questions in figure 2. While discussing the questions, add this item to the list above:

- Ask "Why is record selection better than the previously used strategies?"

## Team Activities

The next activities focus on the data base's vice president records. This is easiest to do if the categories on the presidents are temporarily deleted from the screen. To do this, be sure you are in the multiple record layout and tap Open Apple-L (change the layout). Use Open Apple-D to temporarily delete all the categories on the presidents, one at a time. The other layout options can be used to narrow or widen the remaining categories so that all the information is visible on the screen without any category taking more space than it needs.

Have each student write three questions that s/he thinks would be solved best using each of the strategies—arranging, finding and selecting. Then form pairs of students and have them merge their lists by selecting the three best questions for each category and creating a new list with their best questions mixed (not grouped by strategy). (This is a good opportunity to practice the copy function while using *AppleWorks'* word processor.)

Have each pair swap questions with another pair, answer each other's questions, and identify the search strategy they think most appropriate for each question. Then have them mark the single best question for each of the three search strategies. Have the two pairs meet to discuss answers, focusing on the intended search strategy and the strategy the solving team thought was most appropriate. Have them explain to each other their differences in opinion.

Next, create handouts of the best questions, with one strategy to a page. Provide room at the bottom for students to identify: 1) Which two questions from this sheet were particularly good for solving by finding, etc., and 2) what factor(s) made these particularly good questions for solving by that method. Pass these out to the teams and have them complete them. Figure 4 is a sample of actual student-generated questions for the three search strategies.

## Conclusion

Now that my students have gone through this "training session," they are able to perform much more efficient searches. They have learned to analyze the question before wasting time on trial and error or simply trying their favorite strategy. And they all take pride in their ability to design search strategies that give precise answers.

*[Larry Hannah, California State University, Sacramento, CA 95819.]*

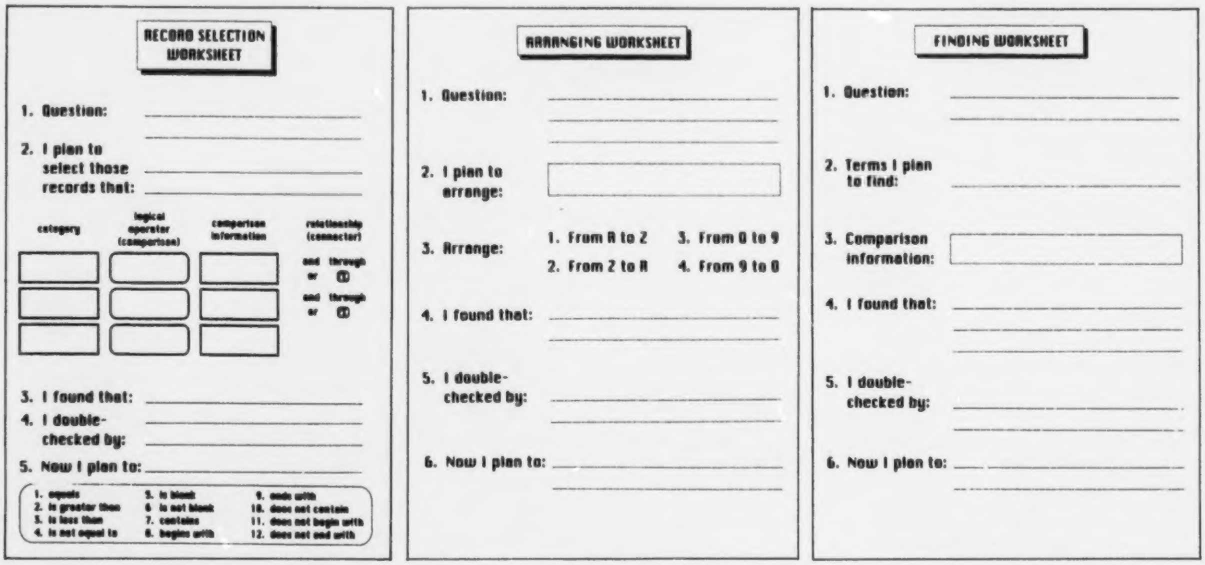
## Presidents and Vice Presidents Data Base

The presidents and vice presidents data base is presented for your information, not as an example of perfect organization. A good extension of the activities here is to have students critique the category choices and come up with a better way to organize the information. Note that "State B/A" refers to the states of birth and adult life.

| President | Pr. Term Office | Pr. Party | Pr. State B/A | Pr. Prior Job | Pr. Notes |
|---|---|---|---|---|---|
| Washington, George | 1789-1797 | Fed | VA | General | |
| Adams, John | 1797-1801 | Fed | MA | VPres | Elected |
| Jefferson, Thomas | 1801-1809 | DR | VA | VPres | Elected |
| Jefferson, Thomas | 1801-1809 | | | | |
| Madison, James | 1809-1817 | DR | VA | Secty of State | |
| Madison, James | 1809-1817 | | | | |
| Monroe, James | 1817-1825 | DR | VA | Secty of War | |
| Adams, John Q. | 1825-1829 | DR | MA | Secty of State | Def for reelect 1828 |
| Jackson, Andrew | 1829-1837 | Dem | SC/TN | US Sen (Tenn) | |
| Jackson, Andrew | 1829-1837 | | | | |
| Van Buren, Martin | 1837-1841 | Dem | NY | VPres | Def for reelect; Cand (Free Soilers) 1848 |
| Harrison, William H. | 1841-1841 | Whig | VA/OH | County recorder | Died (illness) |
| Tyler, John | 1841-1845 | Whig | VA | VPres | |
| Polk, James K. | 1845-1849 | Dem | NC/TN | Gov (Tenn) | |
| Taylor, Zachary | 1849-1850 | Whig | VA | General | Died (illness) |
| Fillmore, Millard | 1850-1853 | Whig | NY | VPres | Cand (American Party "Know Nothings") 1856 |
| Pierce, Franklin | 1853-1857 | Dem | NH | General | |
| Buchanan, James | 1857-1861 | Dem | PA | Diplomat | |
| Lincoln, Abraham | 1861-1865 | Rep | KY/IL | Lawyer | |
| Lincoln, Abraham | 1865-1865 | | | | Died (assassinated) |
| Johnson, Andrew | 1865-1869 | Union | NC/TN | VPres | Impeached |
| Grant, Ulysses S. | 1869-1877 | Rep | OH | General | |
| Grant, Ulysses S. | 1869-1877 | | | | |
| Hayes, Rutherford B. | 1877-1881 | Rep | OH | Gov (Ohio) | |
| Garfield, James A. | 1881-1881 | Rep | OH | US House | Died (assassinated) |
| Arthur, Chester A. | 1881-1885 | Rep | VT/NY | VPres | |
| Cleveland, Grover | 1885-1889 | Dem | NJ/NY | Gov (NY) | Def for reelect 1888 |
| Harrison, Benjamin | 1889-1893 | Rep | OH | US Sen (Ind) | Def for reelect 1892 |
| Cleveland, Grover | 1893-1897 | | | | |
| McKinley, William | 1897-1901 | Rep | OH | Gov (Ohio) | |
| McKinley, William | 1897-1901 | | | | Died (assassinated) |
| Roosevelt, Theodore | 1901-1909 | Rep | NY | VPres | Cand for Pres (Progressive) 1912 |
| Taft, William Howard | 1909-1913 | Rep | OH | Secty of War | Def for reelect 1912 |

| | | | | | |
|---|---|---|---|---|---|
| Wilson, Thomas Woodro | 1913-1921 | Dem | VA/NJ | Gov (NJ) | |
| Harding, Warren G. | 1921-1923 | Rep | OH | US Sen | Died (illness) |
| Coolidge, John Calvin | 1923-1929 | Rep | VT/MA | VPres | |
| Hoover, Herbert | 1929-1933 | Rep | IA/CA | Secty of Commerce | Def for reelect 1932 |
| Roosevelt, Franklin | 1933-1945 | Dem | NY | Gov (NY) | |
| Roosevelt, Franklin | 1933-1945 | | | | |
| Roosevelt, Franklin | 1933-1945 | | | | Died (illness) |
| Truman, Harry S. | 1945-1953 | Dem | MO | VPres | |
| Eisenhower, Dwight | 1953-1961 | Rep | TX/NY | General (NATO) | |
| Kennedy, John F. | 1961-1963 | Dem | MA | .US Sen (Mass) | Died (assassinated) |
| Johnson, Lyndon B. | 1963-1969 | Dem | TX | VPres | |
| Nixon, Richard M. | 1969-1974 | Rep | CA | Attorney | VPres (1952-1960) |
| Nixon, Richard M. | 1969-1974 | | | | VPres (1952-1960); resigned |
| Ford, Gerald R. | 1974-1977 | Rep | NE/MI | VPres (appointed) | Def for reelect 1976 |
| Carter, James E. | 1977-1981 | Dem | GA | Gov (Ga) | Def for reelect 1980 |
| Reagan, Ronald | 1981-1984+ | Rep | IL/CA | Gov (Cal) | |

| Vice-Pres | VP Term Office | VP Party | VP State B/A | VP Prior Job | VP Notes |
|---|---|---|---|---|---|
| Adams, John | 1789-1797 | Fed | MA | Diplomat | Elected pres 1796 |
| Jefferson, Thomas | 1797-1801 | DR | VA | Secty of State | Elected pres 1800 |
| Burr, Aaron | 1801-1805 | DR | NJ/NY | US Sen (NY) | Indicted for treason |
| Clinton, George | 1805-1812 | DR | NY | Gov (NY) | |
| Clinton, George | 1805-1812 | | | VPres | Died in office |
| Gerry, Elbridge | 1813-1814 | DR | MA | Gov (Mass) | Died in office |
| Tompkins, Daniel D. | 1817-1825 | DR | NY | Gov (NY) | |
| Calhoun, John C. | 1825-1832 | DR | SC | Secty of State | |
| Calhoun, John C. | 1825-1832 | Dem | SC | VPres | Resigned to become Sen; changed parties 1828 |
| Van Buren, Martin | 1833-1837 | Dem | NY | Secty of State | Elected pres 1836 |
| Johnson, Richard M. | 1837-1841 | Dem | KY | US Sen (1819-1829) | |
| Tyler, John | 1841-1841 | Whig | VA | US Sen (1827-36) | Became pres on death of Harrison |
| none | 1841-1845 | | | | |
| Dallas, George M. | 1845-1849 | Dem | PA | Diplomat | |
| Fillmore, Millard | 1849-1850 | Whig | NY | Comptroller (NY) | Became pres on death of Taylor |
| none | 1850-1853 | | | | |
| King, William R. | 1853-1853 | Dem | NC/AL | US Sen (Ala) | Died in office |
| Breckinridge, John C. | 1857-1861 | Dem | KY | US House | Cand pres 1860; indicted for treason; Gen & Secty War CSA |
| Hamlin, Hannibal | 1861-1865 | Rep | ME | US Sen | |
| Johnson, Andrew | 1865-1865 | U/D | NC/TN | Gov (Tenn)/Military | Became pres on death of Lincoln |
| none | 1865-1869 | | | | |
| Kolfax, Schuyler | 1869-1873 | Rep | NY/IN | US House (Ind) | |
| Wilson, Henry | 1873-1875 | Rep | NH/MA | US Sen (Mass) | Died in office |
| Wheeler, William A. | 1877-1881 | Rep | NY | US House | |
| Arthur, Chester A. | 1881-1881 | Rep | VT/NY | Collector | Became pres on death of Garfield |
| none | 1181-1885 | | | | |
| Hendricks, Thomas A. | 1885-1885 | Dem | OH/IN | Gov (Ind) | Died in office |
| Morton, Levi P. | 1889-1893 | Rep | VT/NY | Banker (NY) | |
| Stevenson, Adlai E. | 1893-1897 | Dem | KY/IL | Asst Postmaster | |
| Hobart, Garrett A. | 1897-1899 | Rep | NJ | Lawyer, businessman | Died in office |
| Roosevelt, Theodore | 1901-1901 | Rep | NY | Gov (NY) | Became pres on death of McKinley |
| Fairbanks, Charles W. | 1905-1909 | Rep | OH/IN | US Sen (Ind) | |
| Sherman, James S. | 1909-1912 | Rep | NY | US House | Died in office |
| Marshall, Thomas R. | 1913-1921 | Dem | IN | Gov (Ind) | |
| Coolidge, Calvin | 1921-1923 | Rep | VT/MA | Gov (Mass) | Became pres on death of Harding |
| Dawes, Charles G. | 1925-1929 | Rep | OH/IL | Banker/financier | |
| Curtis, Charles | 1929-1933 | Rep | KS | US Sen (Kan) | |
| Garner, John N. | 1933-1941 | Dem | TX | US House | |
| Wallace, Henry A. | 1941-1945 | Dem | IA | Secty of Agriculture | |
| Truman, Harry S | 1945-1945 | Dem | MO | Us Sen | Became pres on death of Roosevelt |
| Barkley, Alben W. | 1949-1953 | Dem | KY | US Senate | |
| Nixon, Richard M. | 1952-1961 | Rep | CA | US Sen | Cand for pres 1960, 1968 (elected) |
| Johnson, Lyndon B. | 1961-1963 | Dem | TX | US Sen | Became pres on death of Kennedy |
| Humphrey, Hubert H. | 1965-1969 | Dem | SD/MN | US Sen (Minn) | Cand for pres 1968 |
| Agnew, Spiro T. | 1969-1973 | Rep | MD | Gov (Md) | Resigned |
| Ford, Gerald R. | 1973-1974 | Rep | NE/MI | US House (Mich) | Appointed VP; became pres on resignation of Nixon |
| Rockefeller, Nelson A. | 1974-1977 | Rep | ME/NY | Gov (NY) | Appointed when Ford became president |
| Mondale, Walter F. | 1977-1981 | Dem | MN | US Sen | Cand for pres 1984 |
| Bush, George | 1981-1984+ | Rep | MA/TX | | |



RECORD SELECTION WORKSHEET

1. Question:
2. I plan to select those records that:

| category | logical operator (comparison) | comparison information | relationship (connector) |
|---|---|---|---|
| | | | and through<br>or ⊕ |
| | | | and through<br>or ⊕ |
| | | | |

3. I found that:
4. I double-checked by:
5. Now I plan to:

1. equals
2. is greater than
3. is less than
4. is not equal to
5. is blank
6. is not blank
7. contains
8. begins with
9. ends with
10. does not contain
11. does not begin with
12. does not end with

ARRANGING WORKSHEET

1. Question:
2. I plan to arrange:
3. Arrange: 1. From A to Z 2. From Z to A 3. From 0 to 9 4. From 9 to 0
4. I found that:
5. I double-checked by:
6. Now I plan to:

FINDING WORKSHEET

1. Question:
2. Terms I plan to find:
3. Comparison information:
4. I found that:
5. I double-checked by:
6. Now I plan to:

*Figure 1.*

**Quick Questions:**

**Data Base Presidents**

Use these questions both after students have learned Find and Arrange and after learning Record Selection.

1. Which presidents served between 1853 and 1889?

   Pierce, Buchanan, Lincoln, Johnson, Grant, Hayes, Garfield, Arthur, Cleveland

2. (After explaining the category "Pr St B/A" [B=state in which president was *b*orn; A=state from which elected as an *a*dult])

   How many presidents were born in Ohio? Who were they?

   Grant, Hayes, Garfield, Harrison, McKinley, Taft, Harding

3. How many presidents were elected as adults from New York but were not born in New York?

   Cleveland, Eisenhower, Arthur
   [Record selection strategy: Pr St B/A contains NY AND Pr St B/A does not begin with NY]

4. Who was the last Whig president?

   Fillmore

5. How many presidents had the prior job of vice president? Who were they?

   12 Ford, Adams, Arthur, Coolidge, Fillmore, Jefferson, Andrew Johnson, Lyndon Johnson, Theodore Roosevelt, Harry Truman, John Tyler, Martin Van Buren

6. Which president(s) was/were impeached?

   Andrew Johnson

7. Which party had the least number of presidents?

   Union

8. Who was the only president born in California?

   Nixon

*Figure 2.*

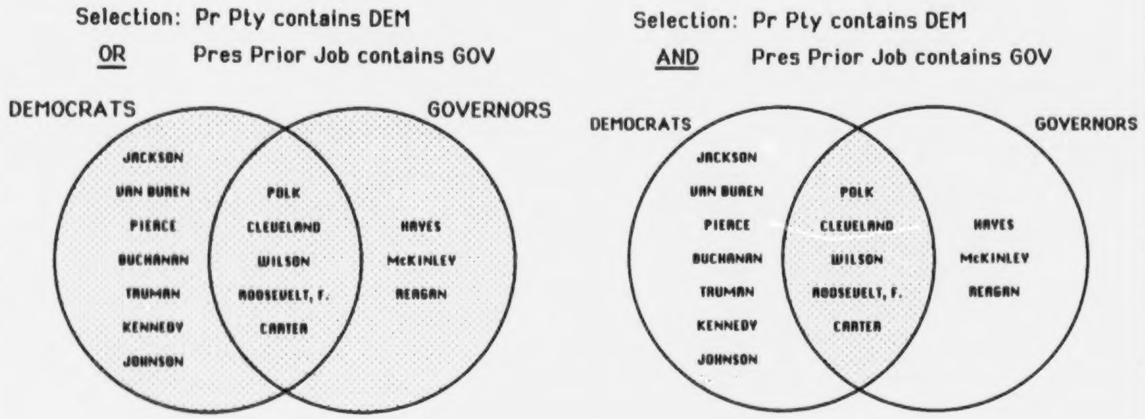

Selection: Pr Pty contains DEM
OR Pres Prior Job contains GOV
DEMOCRATS
GOVERNORS
JACKSON
VAN BUREN
PIERCE
BUCHANAN
TRUMAN
KENNEDY
JOHNSON
POLK
CLEVELAND
WILSON
ROOSEVELT, F.
CARTER
HAYES
McKINLEY
REAGAN
Selection: Pr Pty contains DEM
AND Pres Prior Job contains GOV
DEMOCRATS
GOVERNORS
JACKSON
VAN BUREN
PIERCE
BUCHANAN
TRUMAN
KENNEDY
JOHNSON
POLK
CLEVELAND
WILSON
ROOSEVELT, F.
CARTER
HAYES
McKINLEY
REAGAN

*Figure 3.*

## Questions on the Vice-Presidency

**Finding (⌘F)**

1. How many vice-presidents were appointed? Who were they?
2. List the vice-presidents whose name had "John" in it.
3. In what years was there no vice-president?
4. Who was vice-president in 1929?
5. Which vice-presidents died in office?
6. During what period of time was Calvin Coolidge vice-president?
7. Which vice-presidents were indicted for treason?

**Arranging (⌘F)**

1. How many vice-presidents' last name started with the letter C?
2. How many vice-presidents were born in Kentucky?
3. Name all vice-presidents who served before 1800.
4. Who was the first vice-president to hold office after 1800?
5. Which state has been the birth site of the most vice-presidents? How many were born there? Who were they?
6. Which vice-presidents were born in New York? List them in reverse alphabetical order.
7. Which vice-presidents were governors just before their election as vice-president?

**Record Selection (⌘F)**

1. Identify all vice-presidents born in Kansas whose prior job was U.S. Senator.
2. Name the vice-presidents who were Democrats and had previously served as governor.
3. Which vice-presidents were governors from Mass.?

4. List all vice-presidents who had served in the Senate in the 19th century as Democrats.
5. List the vice-president whose prior job was Secretary of State and who was from Virginia.
6. Which former governor of Indiana died in office as vice-president?
7. Which vice-presidents who were not Democrats or Republicans were later elected as president?
8. Which vice-president's term began and ended in 1841? Why?
9. Name all vice-presidents whose prior job was U.S. Senator and who subsequently were elected to the presidency.
10. From those vice-presidents who took office as president after 1920, which one served in the Senate before election as vice-president?
11. How many Democratic vice-presidents served in the 19th century who were not born in New York?

*Figure 4.*

## Introduction to Searching in the AppleWorks Data Base Management Program
## Part I

Load the president and vice president data base. Searches are generally easier in multiple-record layout. Switch to that mode by pressing ⌘-Z if you aren't in it already.

### Arranging Records

1. You can arrange all of the records in an *AppleWorks* data base file based on the information in a single category (e.g., Pr Term Off). The category can be arranged in any one of four ways: (1) from A to Z (alphabetical order); (2) from Z to A (reverse alphabetical); (3) from 0 to 9 (smallest to largest number); and (4) from 9 to 0 (largest to smallest number).
2. To arrange the information, use the following steps:
   a. Place the cursor in the category you want to sort;
      —use TAB to move right
      —use ⌘ -TAB to move left
   b. Press ⌘ - A for Arrange;
   c. Select the option you want by typing the number of the choice you want and then RETURN *or* by pressing the ↓ key until your choice is highlighted and then RETURN.
3. Try arranging the categories using different ⌘ - A options.
4. Complete **Part A** of **DB Worksheet I.**

### Finding Records

1. You can locate specific information anywhere in your file by using a **Find** search. For example, if you wanted to select all of the files in which the state of Virginia appeared, you could search for all records that included "VA." You also might get a file that included the vice-presidential note "*va*cationed a lot," but we'll show you how to check for that in a moment.
2. To conduct a **"Find"** search, use the following steps.
   a. Press ⌘ - F for Find.
   b. The message "Type comparison information: " will appear at the bottom of the screen.
   c. Let's assume that you do want to find all of the records that include "VA." Type VA and press RETURN.
   d. Eleven records should be displayed. Only eight of these records show "VA" in column "pr St B/A." Check each of the other records by using ↓ to move to the appropriate line and then ⌘ - Z to Zoom in on the individual record. List the reasons below.

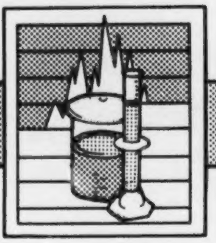
| *President* | *Reason* |
|---|---|
| Adams, John | |
| Jackson, Andrew | |
| Van Buren, Martin | |

3. To return to "All records," press the ESC key.
4. Complete **Part B** of **DB Worksheet I.**

# Introduction to Searching in the AppleWorks Data Base Management Program
## Part II

**Using Record-Selection Rules**

1. Record Selection allows you to ask the data base to display only the records that meet certain rules. Doing a search this way lets you make quick and precise searches.
2. Let's assume that you want to locate all records of Republican presidents who never had been generals in the army. Follow the steps below.
   a. Press  - R for Record selection. A list of all categories will be displayed.
   b. Decide on the first category you want to be the basis for the selection of files (i.e., 3. Pr Pty).
   c. Select the category by typing its number and then pressing RETURN *or* press the ↓ key until your choice is highlighted and then RETURN.
   d. A list of operations will be displayed.
      1. equals
      2. is greater than
      3. is less than
      4. is not equal to
      5. is blank
      6. is not blank
      7. contains
      8. begins with
      9. ends with
      10. does not contain
      11. does not begin with
      12. does not end with
   e. Choose your operation (i.e., **1** [equals]) using the same procedure listed in **c.** above.
   f. Type in the comparison information **(Rep)**.
   g. Now you will be asked to specify the relationship of the first comparison to the next selection condition.
      1. and
      2. or
      3. through
   h. Choose the proper connector (**1** [and]).
   i. Choose the next category and its number.
   j. Type in the next operation (**10** [does not contain]).
   k. Type in the comparison information **(general)**.
   l. Press ESC to begin the actual search. All records that meet both of your criteria will be displayed.
3. Follow the steps below to end a search and return to "All records."
   a. Press  - R.
   b. The message "Select all records? *No* Yes" will appear on the bottom of the screen.
   c. Press **Y** to return to all records.
4. Complete **DB Worksheet II.**



## COMPUTERS IN THE SCIENCES

Edited by **Richard Adams and Heidi Imhof**

# Micro-Climates

*by*

***Gary Monterosso***

*Weather is an ever-changing, ever-dynamic theme for scientific investigation. Instruments to measure the many components of weather can be inexpensively made or purchased, and lessons on weather are included in virtually every science book for Grades K-8. But so often these lessons are dry—for all concerned.*

*The secret to success is to include some element of realism in your weather unit. Here Gary Monterosso describes how he did just that. His students surveyed the pros—weather forecasters for the major networks—and got addicted to publishing their own weather predictions in the process.*

*—The Editors*

One weather source predicts tomorrow's high will be 56° and the chance of rain 90%. Another agrees that the high will be in the upper 50s, but calls the chance of rain 50%. And a third source says mid 50s tomorrow and a 60% chance of rain. Who's right?

To spice up our unit on meteorology last fall, I had my students compare predicted forecasts to the actual weather. We used the computer to organize the student-collected statistics and later to publish them. Students have been so excited by the results that we've continued to collect and publish weather data throughout the year. Although my project involved eighth graders, it can easily be adapted to many levels. With variations, I once used the basic components of it with a fourth grade class.

I started by dividing my class into three groups. Each group was assigned the task of watching either the NBC, ABC, or CBS television affiliate in our nearest city, Philadelphia. Their job was to view the weather segment of the evening news and make note of the forecasted high temperature and sky conditions for the next day. Afterward, I gathered the actual weather statistics and we decided which of the three channels was the most accurate.

My hope was for the kids to hear and become somewhat familiar with common meteorological terms such as *highs, lows, barometric pressure, fronts,* and so on. This part of the study lasted one month. To make it interesting, we divided a large piece of tagboard into thirds and used it as a tally sheet (see Figure 1). By placing it and the forecasts in the hallway, we hoped to interest others in our work.

As our unit progressed, students learned to use and read weather equipment set up at various areas of our school. This equipment included a barometer, a hygrometer, a rain gauge, an outdoor thermometer, and an anemometer. We also studied and identified cloud formations as an aid in forecasting weather. We called our local airport to get information on approaching fronts, data we could not obtain with our building's resources.

| Correct Forecast | | |
|---|---|---|
| Channel 3 | Channel 6 | Channel 10 |
| /// | 卌 / | //// |

*Figure 1.*

Our ultimate plan was to compile daily readings of our apparatus at three times during the morning (upon arrival at 8:30, during break time at 10:00, and before lunch at 11:30) and issue a daily forecast. We soon found that organizing the data was too difficult to do by hand, so we decided to write a computer program, in BASIC, to address our needs. Since our eighth grade students had been exposed to some programming concepts in prior years, the task was not too complex. The program simply printed to screen, asking the student for the date, meteorologist's name, and the weather data. The last question to appear was "What is the forecast for the day?" After typing in the forecast, the student would generate a hard copy of the report, which we would copy and post around the school buildings.

To gather the statistics, students worked in pairs and rotated duties weekly. Each pair was assigned the task of reading one piece of equipment or collecting the data and issuing a forecast. This latter group, the meteorologists, entered the data into our Apple computer.

We also used a database to record the days' weather statistics. This allowed us to organize and arrange the information in useful ways. By sorting each day's records, we could spot trends. Are certain months wetter? Was November colder than normal? What was the weather like last January 4th? We used *pfs:File* by Software Publishing. *AppleWorks,* with its integrated capabilities, would be another good choice. Figure 2 is an example of our format with sample data:

| | |
|---|---|
| Date: | 5/14/86 |
| High: | 75 |
| Barometric Pressure: | 29.95 |
| Wind Direction: | S |
| Wind Speed: | 10 |
| Precipitation: | 0 |
| Humidity: | 63% |

*Figure 2.*

The small size of my class (10 students) was certainly an advantage in working with equipment. For larger groups, though, there are alternatives. By exchanging times or days to take statistical readings, all class members can be involved in the creation of the forecast. The number of daily meteorologists can be increased to three or four, though I wouldn't recommend exceeding that number. There is only so much data to be manipulated, and too many students working on it may create confusion or conflict.

In addition to the forecasts, we photocopied blank maps of the United States and used them to plot approaching fronts. By doing this every day, we developed a weather pattern based on front location. I took a wall-sized map of the country and covered it with clear plastic, allowing students to write directly on it. We posted this in the classroom and students added the current day's fronts and high- and low-pressure systems.

After we had determined which news program had the best forecasting record, a student wrote the station's weatherman a letter of congratulations. The station was so pleased by this recognition that it featured our class in a commercial touting their weather accuracy.

What was particularly intriguing about this entire experience was the reluctance of the students to end their work even though the unit had been completed. We decided to continue group forecasts on a weekly basis, for the benefit of the school. I used *Newsroom* (Springboard Software) to integrate our data into a more professional-looking format and titled our paper *Woodland Weather.*

If you'd like to do this project with your students, I'd suggest the following:

- Avoid, if possible, a time of year with few weather changes, such as a dry season or a prolonged cold period. The weather data won't change much from day to day and the unit won't be very exciting. We chose a time of year that is meteorologically active. In Philadelphia the average September temperature is 68. It drops to 57° in October and to 46° in November. In addition, early autumn brings the threat of hurricanes along the eastern coast. Though the brunt of Hurricane Gloria passed into the Atlantic, it was close enough to us to cause very unusual barometric readings. On the other hand, MBL equipment can tease out the small but interesting variations in weather and microclimates even in the subtler seasons. Temperature probes suspended at different heights above the ground and connected to the computer can reveal just how dynamic the weather is—even when the day-to-day weather pattern seems more or less constant.
- Contact an airport, television station, or museum with a meteorological bureau. Many offer tours and/or materials. The Franklin Institute in Philadelphia supplied us with dozens of computer-generated weather maps that I introduced toward the end of the term to show how all the information fits together.
- If you have an extra computer available, you could use it to display your weather report in the hallway. Depending on your abilities, you may be able to include graphs, maps, or even interactive capabilities.

This unit gave students a chance to check up on the experts; gather, analyze, and formulate a weather report just like real weather forecasters; and then share the report with their peers. And working with the television station added a special highlight that these kids won't forget.

The technology is so integrated into the unit that it's almost not noticed. Yet it supports the activity by making data gathering, organization, and reporting a little easier—therefore a feasible classroom activity.

*[Gary Monterosso, 523 Manheim Ave., Bridgeton, NJ 08302.]*

*If you wish to prepare for a hands-on weather experience, Scholastic and Sunburst both have intact databases. Scholastic's program, for use with* AppleWorks, *is* Climate and Weather Lab; *Sunburst's, for* Bank Street School Filer, *is* Climate and Weather Databases. *These databases contain data from the National Oceanographic and Atmospheric Administration. Students can use them to examine relationships between geographic features, such as altitude and latitude, and weather and climate components such as temperature, precipitation, wind, and so on. Use of these databases can lend insight to the real observation experiences that follow.*

*Readers of "Computers in the Sciences"—Richard Adams and Heidi Imhof will be presenting a workshop at NECC '88. We'd welcome the opportunity to interact with you there. See you in Dallas.* *—The Editors.*

# The Student-Designed Database

***by***

***Rick Thomas***

Learning to use an electronic data file is becoming a fact of life for many secondary students. Whether they learn its use on the job (so to speak) in their social studies or science classes or they are exposed to this tool in a computer literacy class, the skills associated with electronically finding, selecting, and organizing data are becoming a part of the common curriculum. Hunter (1985) has suggested a three-stage model for learning to effectively use a database program:

- Using data files;
- Building files; and
- Designing files.

Much of the database course materials available today are in stage one, requiring use of existing data files. In addition to promoting knowledge of content, recent research (White, 1987) suggests that the use of data files in this manner does in fact support the development of important problem solving skills including identifying necessary and sufficient information and formulating alternative organizations of data.

Building files takes students to the stage of locating appropriate sources of information and organizing and entering data into the computer. Courseware such as *GeoWorld* (Snyder, 1987) give students this experience. The program provides a structure for the data involved and a basic set of information which students are required to extend as part of the simulation. (See *TCT*, November 1987, for a review of *GeoWorld*.)

Hunter's third stage, designing files, is conceptually the most difficult. It incorporates using and extending files as well as requiring that students ask questions that shape the initial organization of the file and the selection of data. The material that follows, from *ClassWorks: AppleWorks for the Classroom*, newly published by ICCE, offers an extended example of this process and suggestions for classroom use.

For the following lesson, I suggest working in a large group format. Depending on the ability level of your class, a project such as this may prove too difficult for small groups. Middle school teachers have indicated success with advanced eighth graders working in small groups. Average ability high school juniors and seniors are able to implement their own projects, although the exchange of ideas provided by groups is preferable.

**Number of Class Periods: 10-14**

Creating and using a database generally consists of the following steps:

1) Identifying a problem;
2) Brainstorming questions related to the problem;
3) Identifying the specific information and possible sources needed to answer each of the questions;
4) Analyzing the scope of the problem and the appropriateness of using a computer to explore it;
5) Prioritizing the questions and selecting those which will be studied;
6) Clarifying and eliminating duplicate categories of information;
7) Identifying the key, or most significant, category;
8) Arranging information by categories in a table;
9) Modifying categories and the organization of information as needed so that you can answer your questions (this may involve repeating all or some of steps 2 through 8);
10) Doing the research to gather the necessary information;
11) Creating the computer version of the database and entering the data, supplementing it with other sources as needed;
12) Asking your questions in the form allowed by the database program you are using, developing and testing hypotheses, and drawing conclusions; and
13) Summarizing your work and conclusions in a report.

Only a few of these steps (11 and 12, and perhaps 13 if a word processor is used), require the use of a computer. Otherwise, the process of creating a database is a conceptual activity akin to composition.

## AN EXAMPLE

Modeling the creation of a database as a large group activity with the active participation of an entire class is an effective way of introducing the process outlined above. The following example is one suggestion. It is important to remember, though, that the activity will have the greatest impact if the problem selected is one in which you and your class share an interest.

**1) Identify the problem**

Prime time commercial television seems to be dominated by a limited variety of different types of shows.

**2) Brainstorm related questions**

Depending on the number of questions, this activity may take a considerable amount of room. You will need ample board space or butcher paper on which questions can be recorded. Leave room beneath each question to expand your outline in the next step.

a) What types of shows are aired?

b) How do the different networks compare in terms of the types of shews they present?

c) Is there a relationship between types of shows and the tastes of different age groups?

d) Is there a relationship between the type of show and the time it is shown?

e) Do different advertisers tend to purchase time on different types of shows?

f) Are different types of products associated with different types of shows?

etc.

**3) Identify kinds of information needed and sources**

a) A list of class-developed categories of types of shows (e.g., situation comedies, sports, movies, soaps, drama) and a matching list of criteria for classifying shows in each category;

b) A list of shows classified by network and type (use *TV Guide* and your list of categories and criteria);

c) A list of shows classified by the age group at which each is aimed (use results of a class survey of different age groups and their viewing preferences);

d) A list of shows classified by time shown (use *TV Guide*);

e) A list of advertisers for each show (summary of one or two weeks' viewing and tallying of advertisers);

f) A list of class-developed categories for classifying types of products (e.g., food, beverages, cleaning products, movies, personal care products) and criteria for classifying in each category;

g) A list of advertisers for each show by type of product (class summary of advertisers and classification scheme);

etc.

**4) Analyzing the scope of the problem**

There are basically two questions to answer here: 1) Is the computer an appropriate tool to use in analyzing the problem the way it has been defined? And 2) Is the software adequate to manage the amount of information that will be collected? Not every program can handle every application. For example, *AppleWorks*, used with a 128K Apple II, is not suitable for maintaining an inventory of even a small store. (There is a limit of approximately 750 records unless extra memory is added to the computer.) It is important for students to realize that a computerized database, despite its novelty, is not the only means of organizing and communicating the information with which they are working.

The data that will be required to explore the television problem seems to satisfy both conditions that suggest database use: The information is not easily accessible in any one source, and there is not an overwhelming amount.

**5) Prioritizing questions**

The task of prioritizing questions clearly establishes the tone and perspective of the project. Choosing to emphasize the role of advertisers in the present case, for example, would cast the data in a different light than would focusing on age group preferences. The task is analogous to the process of outlining an essay and identifying a thesis statement and those arguments which best support it. The nice thing about an electronic database, though, is that it is dynamic. The priorities you establish now are not carved in stone. The tool allows you the flexibility of examining the data under a different organization later.

Questions from step 2 in order of significance for this example:

a, f, e, b, c, d

**6) Clarifying categories of information**

It is now possible to define specific categories of information based on the significance that has been attached to each of the questions.

| Category | Definition |
|---|---|
| Show | • title |
| Type | • based on class list of categories and criteria |
| Principal Advertiser | • "This show brought to you by. . . ." |
| Type of Product | • based on class list of categories and criteria |
| Network | • ABC, NBC, CBS |
| Target Audience | • based on class age-group definitions and survey |
| Broadcast Time | • prime time (8:00-11:00 PM) |

**7) Key category**

Identify the focus of information in the database—in this case the name of each show.

**8) Table**

| Show | Type | Principal Advertiser | Type of Product | Network | Target Audience | Broadcast Time |
|---|---|---|---|---|---|---|
| Magnum | | | | | | |
| Cheers | | | | | | |
| Cosby | | | | | | |
| etc. | | | | | | |

**9) Testing your organization**

Students may experience difficulty at this point if they fail to keep in mind the questions they want answered as they categorize the available information. You need to ask whether or not the structure imposed on the data supports answering the types of questions raised. Now is the time to test the organization by posing the questions, identifying appropriate database operations, and checking their feasibility against the categories defined.

For example:

How do the different networks compare in terms of the different types of shows they present?

Selection Rule: Network equals (each network)

Arrange by: Type

This question can be answered, but you may decide after review that certain questions *cannot* be answered because of limitations in the organization of the data or in the database program itself. Careful review can save considerable effort in collecting data in either case.

**10) Research**

Collecting the information necessary for this example will clearly benefit from a division of labor. Teams should be assigned the projects of developing survey questions and classification schemes for shows and advertising products and then conducting the surveys. Cards need to be prepared for collecting data on individual shows. Individuals must then be assigned the task of watching specific shows.

Students are particularly susceptible to two problems involved in the research process:

a) *Lack of Objectivity*—Preconceptions have a way of sneaking into work. The way in which survey questions are posed, for example, may influence answers. It is important that work be reviewed with this possibility in mind.

b) *Poor Sampling*—Generalizations apply only to the sample from which data is fairly drawn. You need to question how representative the sample is of the population involved and whether or not a random process is planned to collect data.

**11) Creating the computer version of the database**

Now that all of the data is collected, it is ready to be incorporated in a file using database management software. Have students practice these steps. Each pair of students creates its own version of the class file and then goes from computer to computer entering a small part of the data.

**12) Using the database**

Students now have the opportunity to use the database file to answer the questions that were raised initially. There is also the opportunity for a good deal more learning about the process of conducting research. Raise the following types of questions as students work with the file:

- Is there sufficient information?
- What other types of information might have been included?
- Is the information objective? Can you see the opinions of your class reflected in the data?
- Do you think that if you followed the same process again in collecting your data the results would be the same?
- Now that you have worked with the data, have you discovered any new or unexpected relationships? If you have, how can you test them?

**13) Reporting results**

Reporting the results of the project should provide the opportunity to draw conclusions and to reflect on the process. Students should be asked to identify problems with the way in which the project was carried out and to suggest improvements.

## POSSIBLE PROJECTS

- The content of popular music and videos. (A project suggested by students during Congressional hearings on violence in rock music.)
- Middle school social groups. (A file developed on the basis of surveys of individual middle school students.)
- Newspaper customers. (A file developed by an individual high school student to help manage his paper route. This project was implemented on a spatial database and included a map component in each record.)
- College reference guide. (A group of seniors identified and collected information important to them in selecting a college.)
- Advertising appeal. (A file categorizing advertisements on the basis of what and whom they appealed to.)

As a teacher, you may find yourself threatened by the degree to which students control the development of the suggested project. You need not be. One of the more exciting aspects of working with computers and this type of project is the group dynamics. Students get enthused about their own questions and about thinking through ways in which they can be answered. They eagerly help one another debug the database development process to make their project work. In the end, they will have learned more from their mistakes and from their results, however imperfect they may be, than from a more traditional expository treatment of the subject.

Do students benefit from the experience of designing, extending, and using their own electronic data files? There is no hard research evidence at this time that they do. However, my personal experience with several of the projects described above and the reports of other teachers suggests an emphatic "Yes! The experience is worthwhile." Students learn that the shape of the question is as important as the answer. They learn about the limitations of the tool. They learn to be supportive and constructively critical of one another's work. They learn to examine both questions and answers in light of their own biases and habits. And, perhaps most important in view of the glut of information we all face, students learn that they can organize large amounts of data in a systematic fashion and derive meaning from it. So students (and their teachers) benefit from designing and implementing their own electronic data files. The experience should be part of learning to use the tool effectively.

*[Rick Thomas, 1974 Minda, Eugene, OR 97401.]*

*Editor's Note: This article is reprinted from* ClassWorks: AppleWorks for the Classroom, *a new booklet published by ICCE. For ordering information, see the ad on page 1 of this issue.*

**References**

Hunter, Beverly, "Problem Solving with Data Bases," *The Computing Teacher*, May, 1985, pp. 20-27.

Snyder, Tom, *GeoWorld*, Cambridge, MA: Tom Snyder Productions, 1987.

White, Charles, "Developing Information-Processing Skills Through Structured Activities With a Computerized File-Management Program," *Journal of Educational Computing Research*, *3*(3), 1987, p. 355-375.

4ᶜS

# Choosing the Right Database Management Program

*by*
***Edward L. Vockell and Donald Kopenec***

Database management programs can provide valuable assistance to educators. We started using *PFS: File* and *Report* about five years ago. When we counted them this summer, we had over 100 disks, each containing a single *PFS: File* database. We used *PFS* to keep track of computer software, to record student grades, to compile bibliographies of books and articles that were professionally important to us, and to maintain various kinds of lists. We also used *PFS* for hobbies: to record our running times, to catalog our VCR programs, to store and retrieve anecdotes, to file information on chess openings, and to compile various lists for our children. Although we benefitted greatly from using *PFS: File* to store information and *PFS: Report* to print it out in a nice format, we found severe shortcomings with the *PFS* programs and eagerly switched to *AppleWorks* when it came out.

*AppleWorks*, the DOS 3.3 and ProDOS versions of *PFS*, and MECC's *Data Handler* are four database programs commonly used in schools. Since most other systems have characteristics in common with these, a comparison of the four may help you to analyze and evaluate almost any present database program, and to understand future developments. A useful way to compare programs is by reasonable tasks that users would like a database management program to perform.

1. Can we store information in categories and retrieve the information upon request according to specified criteria? For example, we may want to store and retrieve information about journal articles we've read, an inventory of computer disks, grades for our students, or phone numbers and addresses of our friends. All four of the programs will perform this task.

2. If we want to enter a piece of information repeatedly on ten different records (e.g., the name of a publisher), we would like to type the entire set of characters just once and then let the computer automatically duplicate our efforts. The DOS 3.3 *PFS* program will not do this, but the other two will. In *Data Handler*, the user may eliminate having to enter duplicate data by defining "default values" for any data fields. Our experience is that this repeated entry of identical information is much easier to accomplish using *AppleWorks*.

3. Can we use a spelling checker? With DOS 3.3 *PFS* and *Data Handler*, this is impossible. Spelling correction is possible with either of the other two programs, but only by transferring the data to the word processor, making corrections, and then transferring it back. This is easier to accomplish with *AppleWorks* than with ProDOS *PFS*. With *AppleWorks*, supplementary programs like *TimeOut* from Beagle Brothers make this task even easier.

4. If we make a mistake while entering text, we would like to use normal word processing strategies to reenter correct data. With *Data Handler* and both *PFS* programs, the word processing capabilities are absurdly weak. Essentially, if you make a mistake, you must retype the data. If you have to enter a few new words in the first line of a five line entry, this may mean that you have to retype the entire entry. The *AppleWorks* database is a little better, but it's still bad. With ProDOS *PFS* and with *AppleWorks*, the shortcoming can be partly offset by transferring to the word processor, making the corrections, and then returning the data to the database. With *Data Handler*, which is menu driven, the user must go to the enter/update sub-menu to change existing records. You can then modify the data in any field.

5. Can we store large numbers of records? For example, we may need to enter information on 2,000 computer programs in our Media Center. *Data Handler* has the capability of record length of 126 characters, or 525 records with a maximum record length of 254 characters. On DOS 3.3 *PFS*, we were limited to about 500 records per file if the records were brief, and to about 250 per file if the records were more detailed. In order to store additional records, it would be necessary to start a second file. Then, in order to do a search for related items we would have to search both files separately. This could lead to serious inconveniences in printing out lists (such as all the math programs in our Educational Media Laboratory). Both of the other programs handle much larger number of records. With our Applied Engineering memory expansion cards, we can get 22,600 records into our *AppleWorks* databases. We have worked successfully with about 2,000 records in ProDOS *PFS*, but the process was painfully slow.

6. We'd like to pull out of computer memory any piece of information that contains specified words or that is related to some numerical values (e.g., all computer programs that deal with "fractions" or all programs published after 1985). All four programs will perform this task, but *AppleWorks* is more likely to do this task quickly. We have had cases where *AppleWorks*

1. equals
2. is greater than
3. is less than
4. is not equal to
5. is blank
6. is not blank
7. contains
8. begins with
9. ends with
10. does not contain
11. does not begin with
12. does not end with
13. is before
14. is after

*Figure 1*
*Search criteria that can be used to find a record with the* AppleWorks *database management system.*

found in three seconds information that took five minutes to pull out of *PFS: File*.

7. Can we search more than one category at a time (e.g., all computer programs published since 1985 that deal with "fractions")? All four of the programs will perform this task, but *AppleWorks* will almost invariably do the task much more rapidly.

8. Can we use an "either/or" search strategy? For example, we may wish to retrieve all articles written by Smith *or* Jones. Neither *PFS* program will do this, but *AppleWorks* and *Data Handler* will. Both *Data Handler* and *AppleWorks* will also allow an "exclusion" search (articles by anyone *except* Smith).

9. Can we use a wide variety of search criteria? *AppleWorks* and *Data Handler* allow a very wide range of characteristics to use as search criteria (Figure 1). *PFS* allows a very narrow range For example, with *PFS* we would have to use convoluted logic to find all our records that are "not blank" or to find all the records whose date of entry was after September 1, 1986.

10. If we are surprised by the results of a search, we would like to be able to verify that we did not make typographical errors or use faulty logic in our search procedures. The *PFS* programs erase everything we enter the moment it begins the search. *AppleWorks* and *Data Handler* leave our entries at the top of the screen, where we can easily reexamine them.

11. Sometimes we want to look for a set of two or more adjacent words in a sentence or paragraph. This is called a "full text search." We can do this with the *PFS* programs, even though they may take a while to do it. *AppleWorks* allows at most only one line of information per category of information. Full paragraphs can be entered by using several categories on consecutive lines, but then we can find adjacent words only if the words do not occur at the end of one line and the beginning of the next. Since we never know when such splits occur, it is really pointless to try this on *AppleWorks*. Full text searches are possible with *Data Handler*, but because the records are limited to 254 characters, there is hardly any "full text" to search.

12. Sometimes we may want to look for a certain word or set of words, but we don't know where they are on the record. (For example, was the word "fractions" in the category labeled Topic, Title, or Summary?). With *AppleWorks*, it's quite easy to search all the categories in each of the records. With *Data Handler*, we would need to do a multi-matching data fields search. With the *PFS* programs, it would be necessary to do a separate search of each of the categories.

13. Can we make certain kinds of comparisons among categories during the search process? For example, we might want to select all the books of which the date we read the book was within two years of the date of publication. None of the programs will perform this task. However, with *AppleWorks*, we can transfer the data to the spreadsheet, make the comparison, encode it in some way, and then print it out.

14. Can we print out attractive lists of information in neatly arranged columns? All four of the programs will do this. The major advantage to *AppleWorks* is that it enables you to see on the screen what your output will look like. In addition, if there's any selecting or sorting to be done (as is usually the case), *AppleWorks* will do it more quickly.

15. Can we generate keyword listings? For example, if we have a category named "Topic," we might have a program categorized as both "Fractions" and "Decimals." We would like to generate a list with both of these words in the left column, and our program listed separately under both categories (Figure 2). Both versions of *PFS: Report* will do this, but *AppleWorks* and *Data Handler* will not.

16. In generating labels, we would like to print the information out in a different order than the order in which it was entered. For example, we may wish to address envelopes with the first name in front of the last name, even though these are in the opposite order in the database. *AppleWorks* and *Data Handler* will do this easily. To accomplish the same task with the *PFS* programs, it is necessary to reformat ("redesign") the entire file.

17. Can the computer do simple computations for us while it generates lists? *Data Handler* does not allow this. Both *PFS* pro-

| Topic | Program | LEVEL |
|---|---|---|
| Decimals | Decimal Practice | Elem |
| | Math Blaster | Elem |
| | Word Problem Adventure | Elem Sec |
| Ecology | Oh, Deer! | Elem Sec |
| | Science Vol 3 | Elem Sec |
| | Social Studies Vol 1 | Sec |
| Fractions | Fraction Practice | Elem |
| | Math Blaster | Elem |
| | Word Problem Adventure | Elem Sec |

*Figure 2*
*Example of keyword listings.*

grams will do this, but *AppleWorks* has greater versatility. It performs more computations and puts the results in more useful places. In addition, we can transfer the data to and from the spreadsheet to do more complex computations.

18. Can we enter information from the database into a word processor through a mail merge option? This would permit us, for example, to keep our students' grades in a database, and then write each student a personalized letter describing his/her performance in our class. Both *AppleWorks* and ProDOS *PFS* will do this.

19. Can the computer perform simple computations and then print these in a mail merge option through the word processor? None of the programs will do this. Although *AppleWorks* will perform the computations and print them in its lists, it will not incorporate this information into the mail merge. To get the information into the mail merge, it is necessary to copy it manually into a printable field in the database or to take a complex extra step to work through the spreadsheet.

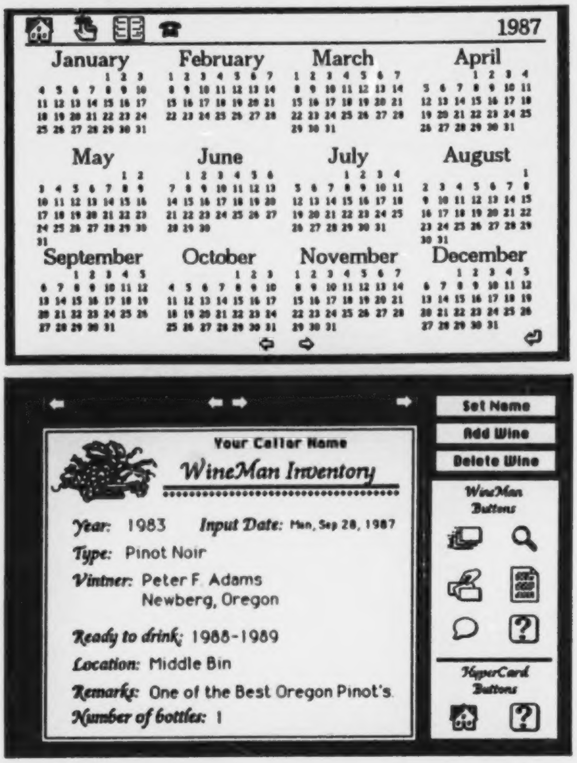
20. Can we create graphs that summarize the data contained in the database? For example, we might like a bar graph comparing the number of students who received various grades in a course. *Data Handler* will not do this. The *PFS* programs will do it through an additional program called *PFS: Graph*. *AppleWorks* alone will not do this, but there are supplementary programs (such as *TimeOut Graph* from Beagle Brothers) that accomplish this task.

As you can see from an examination of our list, there were a few problems that neither *Data Handler*, *PFS*, nor *AppleWorks* would solve. In other cases, all the programs would work equally well. But in an overwhelming number of cases, it seemed obvious that *AppleWorks* would serve us better. There were only three ways in which *PFS* was superior to *AppleWorks*:

1. *PFS* would do full-text searches.
2. *PFS* would provide keyword listings.
3. *PFS* allowed for more than one line per field, thus allowing "catalog" descriptions that could be "flagged" as text and that could utilize wrap-around on printing reports.

Of these, the second was the most important, since we both liked keyword listings. We discovered that by using a program called *The Bridge* (Sun Microsystems), we could efficiently transfer all our old *PFS* files to *AppleWorks*. When we further discovered that ProDOS *PFS* could easily transfer information to and from *AppleWorks*, our decision was easy to make. We now use *AppleWorks* for 95-99% of our database management. We still own *PFS*, however, and when we need a keyword listing we transfer the files to *PFS* for that isolated activity. Keyword listings consequently take about twice as long (since we first have to transfer from *AppleWorks* to *PFS*); but data entry is substantially easier, spelling correction is possible, we can do searches easily and rapidly within any category or combination of categories, and most of our reports are much easier to generate.

For someone else, the choice of programs may be completely different. For example, a librarian might want a database management program to compile current catalogs of books and magazines. This librarian might consider it essential to be able to compile keyword listings as shown in Figure 2. In this case, *PFS: Report* would do the work more effectively. This user might reverse our procedure and use *PFS* as the primary program, relegating *AppleWorks* to a secondary or nonexistent role. *Data Handler*, being menu driven, may appeal to others that need only a basic database that will allow for data entry/retrieval and simple reports and labels. This simplicity makes the program easy for young students to use. Others may choose from databases not discussed in this article. There is no "best" database management program. The question is rather which program is best for a specific application. It is important to list the activities you will expect a database program to perform for you, and then choose the program that best performs those activities.



Your Caller Name

WineMan Inventory

Year: 1983 Input Date: Mon, Sep 28, 1987
Type: Pinot Noir
Vintner: Peter F. Adams
Newberg, Oregon
Ready to drink: 1988-1989
Location: Middle Bin
Remarks: One of the Best Oregon Pinot's.
Number of bottles: 1

*Figure 3*

*Sample screens from HyperCard. A mouse enables the user to click on a calendar date to obtain that day's agenda or to click on a wine name to find out more about that wine.*

As the above comparisons show, database technology is constantly improving as computer technology also improves. For example, Figure 3 shows screens demonstrating *HyperCard*. Although the name lends itself to confusion, *HyperCard* is a software package that allows a user to manage, create, and customize information, text, graphics, sound, music, and animation. Although *HyperCard* is not strictly speaking a database management program, its capability for organizing data makes it function very much like one. *HyperCard* is actually a powerful tool that provides access to other tools; for example, *HyperCard* might provide simplified access to a more sophisticated database. In addition, *HyperCard* allows the user to access data from CD-ROM and prepare interactive video presentations from laser disc. It is possible to visualize a *HyperCard* program as "stacks" of cards or layers that the user can move through one at a time or jump around to retrieve information. Although *HyperCard* does provide many database functions, such as data input, searchng, sorting, and printing, it can also be used for other sophisticated "hierarchical" applications. It is both an information organizer and an authoring tool. Although this technology is not currently available for the Apple II family, its underlying strategy will perhaps provide the basis for new database development.

---

*[Edward L. Vockell and Donald Kopenec, Purdue University Calumet, Hammond, IN 46323.]*

**Software**

*AppleWorks*, Claris Corporation, 440 Clyde Ave., Mountain View, CA 94043.

*Data Handler*, MECC, 3490 Lexington Ave., North., St. Paul, MN 55126.

*HyperCard*, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.

*PFS: File, Report, Graph*, Scholastic Softwre, 730 Broadway, New York, NY 10003

*The Bridge*, Sun Microsystems, 2560 9th St., Berkeley, CA 94710.

*TimeOut* series of enhancement programs, Beagle Brothers, 6215 Ferris Square, Suite 100, San Diego, CA 92121.

# Database Yearbooks in the Second Grade

*by*
***Ruth Hollis***

In many schools the groundwork for integrating technology into the curriculum has already been done. Computers are present in labs and classrooms. Most teachers have had some training in the basics of computer operation and some exposure to educational software. With each new curricular project or reexamination, these teachers ask: Can the computer enable, support, or enhance this project in some way?

This was the situation in the Peru Central School District when the second grade teachers chose "Friendships" as their interpretation of the district's theme—Beginnings—for the New York State Imagination Celebration. They wanted to gather information on all the students in second grade (seven and eight year olds) to use for a variety of activities. Without a computer and a database management program, the time involved in managing all this information would have outweighed the usefulness of the activities. The process of gathering and using the data accomplished a number of project and curricular goals. Students began to recognize differences and similarities in people and developed an awareness and acceptance of others' views. The final yearbook, which combined the information with a picture of each student, enhanced each child's self image and generated much group ownership of the project by students and teachers. Teachers and students learned about databases and their uses, and a ton of data was generated for the types of graphing activities recommended by their math program, *Math Their Way*.

Activities for the Imagination Celebration are organized by representatives from each school. Teachers receive the information at their grade level meetings. As a K-6 district computer instructor, my job involves inservicing teachers, and assisting them in the integration of technology into the curriculum.

Teachers introduced the project to their students by talking about the Imagination Celebration and explaining the theme for the district. They talked about the things the students would like to know about new friends. The classes brainstormed their interest areas, and selected the 10 most important for the project. The teacher reps from each school met to consolidate the interest areas and come up with the same 10 areas for each class to use for the project. I developed a template for the database record and began instructing the teachers in database after school. I modeled how they would teach their students. We brainstormed their favorite areas (restaurants, drinks, TV shows, sports, etc.), and put all the information up on butcher paper. We created the template and entered our data using *Bank Street Beginner's Filer*.

As we began searching the data for fun and interesting relationships, the teachers were already generating ideas for using databases in their curriculum or classroom management. At our next session I had planned to use the Dinosaur Database that is available for *Bank Street Beginner's Filer*. But by then we had the data that their students had entered, and the teachers wanted to use it. Again they had a lot of fun searching and printing reports. "Look at how many of my kids like black. What's that mean?" "Look how many of my kids are still seven. That explains why they always need so much help!"

Each class of students had been given help in database entry. I instructed some classes as large groups. Others were instructed in the lab in groups of nine or less by either the teacher or myself. The instructional method varied according to teacher request.

Students entered the database information throughout the day in their own classroom. They worked in pairs—a doer and a helper. When the doer completed a task, the two would exchange roles. Helpers were instructed to hold the paper and use their words, not their hands, to help. This cooperative effort made entering information a comfortable task and served as a bonding for the students involved. With this method, all students were successful at entry.

When all information was gathered, searching and report printing was done with guidance from the teacher or myself (again depending on teacher request). We usually began by using a large screen monitor and walking through a demo. When talking about themselves, students generate lots of questions (such as, "Can we find out how many kids like the color blue and pizza?") Some caught on right away and helped others. Soon they were generating so many questions that we said, "O.K., now it is time for you to work at the computer and do it yourself."

I merged the individual class databases and gave each teacher two disks—one with the class database and one with the merged databases. We now had a huge quantity of data of interest to students. At a district level meeting, we decided that each teacher would take one field for graphing activities. An inservice was held to train the teachers how to use *Easy Graph* to produce bar, pie, line, and pictographs.

Results were compared between hand and computer graphs and between class and district graphs (see Figure 1). Students discussed differences and similarities, and inferences were drawn and analyzed.

Teachers printed out the databases for their classes, three records to a page. They added a picture for each student, a *Print Shop* cover, and a forward to create a class yearbook.

The final event, a "meet your friend day," was something to behold—students, teachers, administrators, *Print Shop* signs, cupcakes, and a massive controlled movement of kids forming their living graphs about themselves. Each teacher was responsible for a particular aspect of the event, from cupcakes to the formation of each living graph. Luckily the weather was nice, and the event took place outside. We had both a PA system and megaphones so everyone could hear. The students had their yearbooks open to their own records. The announcer would direct students' attention to their favorite color as recorded in their yearbook. "Our favorite color is blue," the announcer would call, and everyone cheered. All the blues would come forward and line up under the sign for their color, all the reds, and so forth, until the students formed a living bar graph. The last field was the birthday field. Students lined up by the month of their birthday, and those kids sat down together to visit and eat their cupcakes and drink juice.

The project would have been difficult without the computer integration. The computer facilitated management of information, teaching of questioning techniques, evaluation of information, inferential thinking skill instruction, and bonding between teachers and teachers, students and students, and teachers and students. The products encouraged group ownership and pride, and demonstrated a level of excellence that might have been difficult to achieve if students and teachers had not had the positive reinforcement and support of peers. The awareness and acceptance of others views is often difficult for some children to grasp. This project focused and was dependent upon this understanding—that everyone is both different and the same in some ways. At the same time, we tried to promote a positive self image—that it is all right to like, feel and chose for yourself.

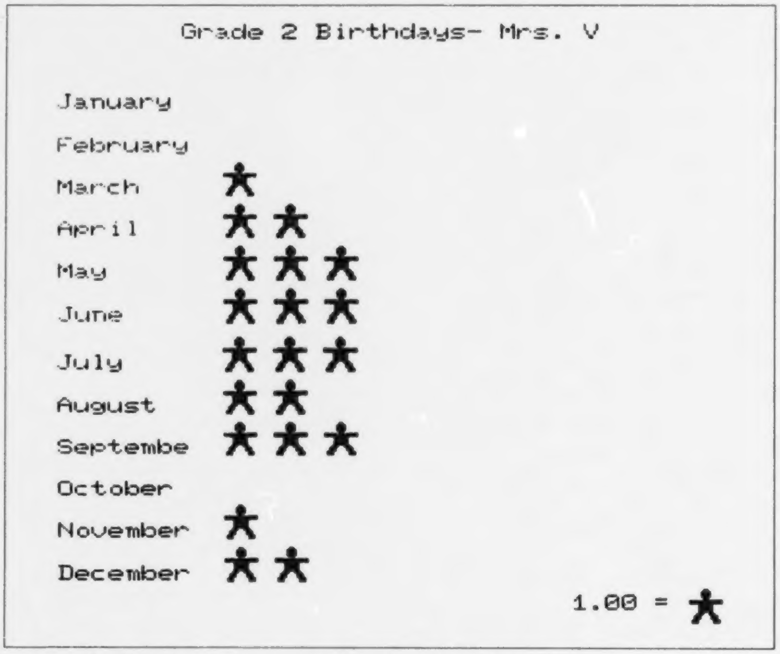


*Figure 1a.* Easy Graph *pictograph of birthdays for a single class.*

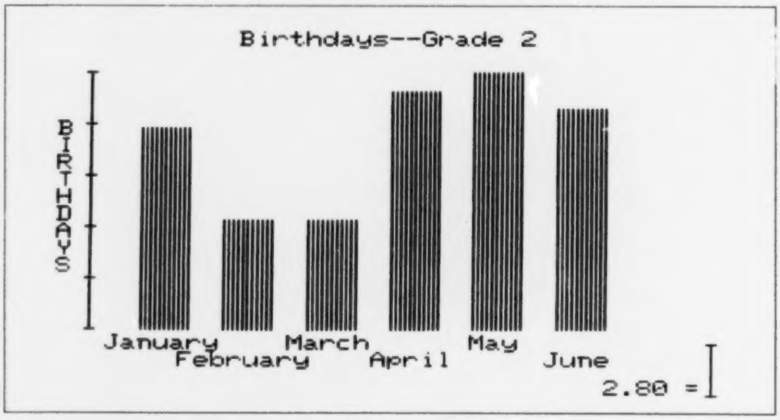


*Figure 1b.* Easy Graph *bar graph of birthdays for an entire grade at Northside School.*

Would anyone do this again? The answer is a resounding "Yes" from students and faculty. They all want to try it in early fall to get to know the students better, to keep bus numbers straight, to print out class lists. Immediately following the Yearbook/Graphing venture, several classes developed other projects using the same strategies: cookbooks, insect study, and animal study. They also used the information entered in these studies to generate stories about their subjects.

The positive results—despite some initial apprehension—have relieved all concerns regarding the merit of the computer and the effort involved in using it. Interest in database programs has spread beyond the second grade teachers. The kindergarten and first grade teachers want to learn more about the project. And the third grade teachers feel like they better learn something about databases so they can keep up with the incoming class.

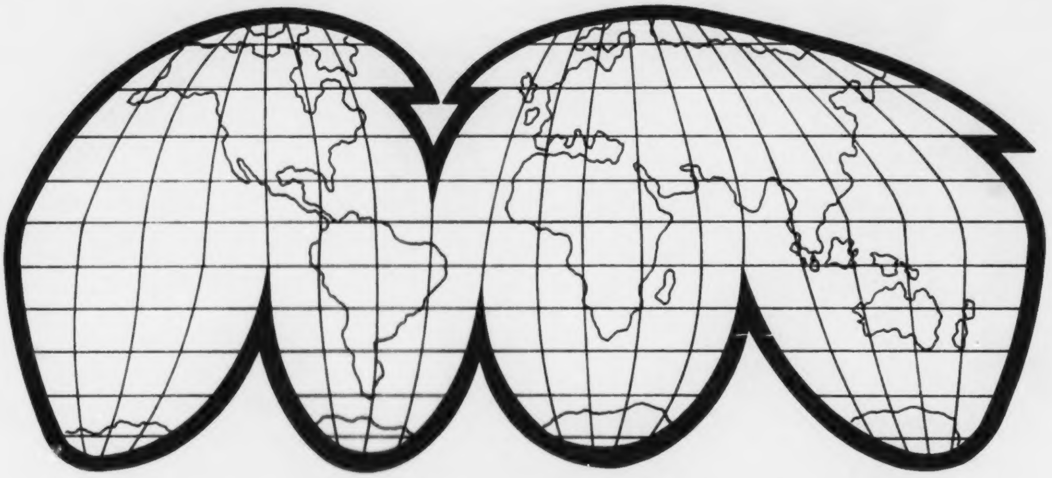
We were ready to ask the question, "Can the computer help us with this project?" The answer was yes, and the process has really moved us along in our efforts to integrate computers into the curriculum in meaningful ways.

*[Ruth Hollis, Peru Central School, Plattsburgh, NY 12903.]*

**Software**

*Easy Graph*, Golier Electronic Publishing, Sherman Turnpike, Danbury, CT 06816.

*Bank Street Beginner's Filer, PrintShop*, Brøderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101.



# A World Geography Database Project: Meeting Thinking Skills Head-On

*by*
*Carlyn L. Elder and Charles S. White*

Numerous authors over the past few years have advanced lofty claims about the ability of databases to improve students' thinking skills, particularly those skills relating to the processing of information necessary for successful problem solving. These include the ability (1) to organize data in such a way that it make sense to them and is easy to use; (2) to glean from a large volume of information that which is relevant to a given problem; and (3) to determine whether or not they have sufficient data to solve the problem, and, if not, where they might obtain them (White, 1987). As educational computing has matured as a field, so have the claims about the effects of databases. We have come to understand that databases don't teach skills, but we still believe that they can help kids learn these skills if *used effectively by teachers*.

Led by this belief, we developed a database experience in world geography for middle school and high school students (Elder, 1988). We are all becoming aware of the alarming national deficiencies in geography knowledge, and in this project we hoped to help students to learn and skillfully use world geography information. At the outset of the project, however, we were met with two basic questions. What does "effective use" of databases mean? Does effective use really "produce" positive changes in students' information processing skills? We looked to see what guidance we could find from the research literature.

## Databases and Thinking Skills: The Research

Our exploration of existing research did not take long. While much has been written about effective use of databases, very little research has been done to see if recommended techniques really work in developing information processing skills. This was confirmed recently by the Office of Technology Assessment's (OTA) study of technology in American education. OTA noted that "while there are numerous anecdotal reports enthusiastically describing [database] use in classrooms across the country, there is very little research documenting the effects of such tools in learning" (U. S. Congress/OTA, 1988, p. 58).

After excluding anecdotal reports and studies focusing on attitudes rather than skills, we found studies that demonstrated positive gains in students' data classification skills, question-asking skills, and the information processing skills involved in assessing relevance, sufficiency, and data organization efficiency (Ennals, 1985; Underwood, 1985; White, 1987).

What we discovered from the existing research provided two main guidelines for database development. First, information processing skills must be taught within the database lessons, through a combination of direct and indirect instruction. Exposure to and use of a database are not enough in themselves to produce gains in skills development. Second, students have to be alerted to when specific skills should come into play as they solve problems. Learning when to use particular skills is part of improving

| | |
|---|---|
| Unit 1: | Population |
| Unit 2: | Agriculture and Climate |
| Unit 3: | Agriculture and Change |
| Unit 4: | Work Force |
| Unit 5: | Trade |
| Unit 6: | Trade and Industrialization |
| Unit 7: | Culture |
| Unit 8: | Government |
| Unit 9: | Comparing Governments |
| Unit 10: | Adding Data |

*Figure 1. World Geography Units.*

In Unit Seven, students are faced with problems generated by conflicting cultures. They must determine to what extent a conquering nation inflicts its culture on the people it conquers and how enduring the cultural infusion is. To work through the unit, students are divided into four groups, and each group is asked to gather data on one of four culture groups—French, Arabic, Spanish, or English. Students in each group use the database to locate those countries where French (Group I), for example, is spoken today as the primary language. Explicit/direct instruction is provided for the retrieval and organizing tasks required for the problem. In this case, they are explicitly instructed to organize the data by writing down the name of the country, the major religion and largest ethnic group. They then examine the data to determine if the data are sufficient for answering the questions and solving the problems.

After this explicit phase, the initial questions in the unit are designed to confront students with a lack of sufficient data for answering some questions, and additional sources will have to be sought. Students in Group I (France), for example, have insufficient data to determine the mother country (Belgium) of the two French-speaking countries that were not colonies of France. They also have insufficient data to identify the religion of France when it was building its colonial empire. To redress this lack of data, students have to determine what data would be relevant to solving the problem and where they might be able to find the needed information.

Indirect instruction is further exemplified in the last lesson in the unit, where the class meets as a group for the final analysis of the data to determine which culture group had the most enduring impact on the people conquered. In this phase, students must discover commonalities and differences among the groups of data, analyze relationships, and pose hypotheses (Hunter, 1985). Students are not told what the generalization is that they should discover from their data, and they may arrive at different generalizations. Class discussion, during which students defend their generalizations and listen to those of other students, answers some questions and generates additional ones. In sum, in Unit Seven, retrieval and organization of data were accomplished by direct instruction while sufficiency and relevancy were taught by indirect means. In other units, the mode of instruction (direct versus indirect) is reversed.

### Worksheet

**Group 1: French**

1. Countries where French is the primary language:

Country Religion Ethnic group

2. The religion of France during the colonial period was:

Primary religion listed for these former colonies:

3. Two colonies that were *not* former French colonies were

____________ and ____________, which were both

colonies of the European country of ____________.

4. Number of ethnic groups: ________ . In your opinion, why are there so many? ____________

### Worksheet

**The Whole Class**

Conquering countries ranked according to which had the greatest cultural influence on the people conquered ("1" had the greatest influence).

1. ____________
2. ____________
3. ____________
4. ____________

**Classroom Use**

The real test of these materials came when used in the classrooms. For this project, six teachers spanning grades six through nine agreed to try out the 10 units for two weeks. In all, 376 students were involved in the fieldtesting. The teachers received training in the use of the computer and the file management program, and received guidance in managing their classrooms with computer resources ranging from one to fifteen computers per class. Materials were also provided to acclimate students to Filing Assistant use and to facilitate classroom logistics.

Teachers liked using the materials because the content of the units fit into their existing curriculum. They also felt that their teaching gained a new dimension by having students use computers and analyze raw data built around major geographic concepts. Teachers' reactions to computer use were positive, but those with only one computer per classroom felt a bit cramped in terms of providing enough quality time for students to use the database. Four computers at a time in the classroom seemed to represent a threshold of comfort for participating teachers.

Students also responded favorably to the materials. Teachers reported that "computers really seemed to captivate" the students. Responses to a student critique form revealed that most students found locating data relatively easy. While the student sample contained both experienced and inexperienced computer users, the overwhelming majority of students reported that the role of "keyboarder" was equitably shared within student groups.

### Conclusion

Beyond general reactions, classroom use of the World Geography Project materials uncovered two important points relevant to teaching thinking skills. First, participating teachers seemed to display increasing awareness of the need to explicitly address information skills that are essential prerequisites for effective problem solving. At the same time, using databases as part of an inquiry approach breaks with traditional classroom practice, and teachers need time to adjust and become comfortable in this very new environment.

Second, it was clear that much work remains to be done to upgrade student information processing skills. These skills do not develop automatically. In lessons where they were not given explicit instructions on what data to retrieve, many students frequently could not determine how they should proceed, largely because they failed to recognize what data might be relevant. This type of problem suggests that students do not have enough opportunities to engage in this kind of intellectual task and require more explicit instruction in fundamental information skills. Overdependence on textbooks will perpetuate the problem. Textbooks often present a problem and its solution in the same paragraph so that students are not given the opportunity to study the data and attempt to solve the problem themselves. Lessons built around a database, with activities structured to teach and to call up information skills, afford students this opportunity.

---

*[Dr. Carlyn L. Elder, Social Studies Department Chair, Falls Church High School, Falls Church, VA; Dr. Charles S. White, Director, Center for Interactive Educational Technology, George Mason University, Fairfax, VA.]*

*The materials described in this article can be ordered by contacting Dr. Carlyn Elder, 3911 Mill Creek Dr., Annandale, VA 22003.*

### References

Elder, C. L. (1988). *Development of a social studies database with accompanying curriculum materials to enhance information-processing skills and geography knowledge.* Unpublished doctoral project, George Mason University.

Ennals, L. (1985). Micro-PROLOG and classroom historical research. In I. Reid and J. Rushton (Eds.). *Teachers, computers, and the classroom* (pp 130-137). Manchester, Great Britain: Manchester University Press.

Hunter, B. (1985). Problem solving with data bases. *The Computing Teacher, 12*(8), 20-27.

U. S. Congress, Office of Technology Assessement. (1988, September). *Power on! New tools for teaching and learning.* OTA-SET-379. Washington, DC: U. S. Government Printing Office.

Underwood, J. D. M. (1985). Cognitive demand and CAL. In I. Reid and J. Rushton (Eds.). *Teachers, computers, and the classroom.* Manchester, Great Britain: Manchester University Press, pp. 25-57.

White, C. S. (1987). Developing information processing skills through structured activities with a computerized file-management program. *Journal of Educational Computing Research, 3*(1), 355-375.

## Appendix

### Fields in the World Geography Database Project

**Population Fields**
Country
Capital
Population (millions)
Birth rate per thousands
Death rate per thousands
% annual national increase
Doubling time (yrs)
Population in yr 2000 (mil)
Infant mortality per 1000
% population under age 15
% population over age 64
Life expectancy-all
Life expectancy-males
Life expectancy-females
Pop. growth 1950-85 (mil)
Pop. growth 1985-2020 (mil)
% school attendance
Yrs compulsory education
% literacy-all
% literacy-male
% literacy-female
% ethnic groups
% religions
% languages

**Physical Geography Fields**
Area (sq. kilometers)
Comparable size to U. S.
% urban population
% cultivated land
Density per sq. km.
Physical features
Climate
Population centers
Agricultural products
% GNP in agriculture

**Economic/Government Fields**
Type of government
Independence (year)
Budget ($ billions)
% budget in defense
GNP ($ billions)
Per capita ($ billions)
Work force (millions)
  % agricultural
  % industry/commerce
  % services
  % government
  % other
Industry types
  % GNP
Exports ($ billions)
Imports ($ billions)
Trading partners

# Database Activities in a One-Computer Classroom

*by Jim Watson*

Students who leave school with just a set of static facts will be ill-prepared for a world in which they will change careers 6-10 times (Bailey, 1986). Students need to know how to *get* the facts and how to *use* them well. If students learn to use a database manager for storing and manipulating information, they will have taken a step toward preparing themselves for the information age, and they will have a tool to take with them.

A database is a valuable teaching/learning tool with the potential to help you present material in more depth, in a different and interesting way. While a database manager is not the tool for every analysis of information, it has several advantages: (a) It can contain an incredible amount of information, (b) it can organize data in almost any form, and (c) it is very fast at finding and organizing information.

With these advantages, a database provides an ideal environment for students to learn to organize, analyze, synthesize, and evaluate information. Students can gather, format, rearrange, and update information; show relationships; find trends; and test hypotheses. In short, a database allows students to go beyond the facts (Beverly Hunter, 1985). It allows the use of higher level thinking skills to explore the *meaning* of the facts. As the students begin using the database to make connections, see relationships, and draw conclusions, you are going to hear alot of "Aha's" in the classroom. Databases are an exciting way to learn.

Obviously databases are hands-on computer programs. Students need access to appropriate equipment, but a lot can be achieved without a whole labful of computers. Can the advantages described above be realized in the one-computer classroom? From my experience the answer is "Yes." I have found several advantages and methods for managing classroom computer use. A variety of activities can be used with either a whole class or learning center approach.

## Advantages to Working in the Classroom

First, less instructional time is required when one computer is being used by the whole class. It is not necessary for every student to know every command of the particular database program being used. The teacher is better able to instruct as problems occur. There will be less chance of losing data, less scrambling from computer to computer to solve problems. The reduced knowledge base required to use one computer in a class is a particular advantage with younger students (Grades 3-6).

Second, the first time a teacher uses a database with a class, the unit may be a little on the rough side. In a classroom, omissions and errors in instruction are discovered by the first class you teach or the first group on the computer and they can be corrected for the rest. In a lab, the difficulty of correcting these errors is multiplied by the number of students assigned to computers. Picture the mayhem as one by one the groups in the lab discover that an important step has been left off a worksheet.

Third, using one computer for the whole class can foster a spirit of teamwork and cooperation. Pressure on less able students is reduced when they do not have to produce results from a database totally on their own. In a lab, students frequently race against those at adjacent computers, resulting in sloppy work. Such competition doesn't occur in a one-computer classroom.

Finally, having the computer in the classroom instead of the lab gives a direct connection between the regular curriculum and the data file used on the computer. A trip from the classroom to the lab often makes this connection difficult to maintain. (To some students the lab seems more like an arcade than a classroom.) And while the lab schedule does not often tie in neatly with the flow of the curriculum, the classroom computer is always ready for the teachable moment.

Clearly there is room for databases in both the lab and the classroom. But it is liberating to know that a school does not need a lot of hardware to make a database unit possible.

Once students become comfortable using databases, they will be able to use them on (or even create them for) independent projects. I see students becoming comfortable with databases in the supportive group learning environment of the classroom and then moving to the lab to use their new tool independently.

Databases can be used to research material from almost any subject area. Social studies (states, countries, elections); science (elements, animals, dinosaurs); health (foods, drugs); reading (favorite books, vocabulary, authors); language arts (parts of speech, spelling words); multicultural studies (notable people from various ethnic groups); art (artists, periods) are all possibilities. Once students are able to use a database they can use it to broaden their knowledge in nearly any area.

## Managing Computer Time

In a single-computer classroom, databases can be demonstrated and used by combining whole class activities and small group, learning center activities.

Whole class activities are appropriate for introducing and demonstrating database use no matter how many computers are available for individual or group work. A large screen monitor or (preferably) a data projection panel is necessary for whole class demonstrations. Some whole class activities discussed below are useful for practicing content and higher order thinking.

A learning center approach allows students to have small group time using

**Scavenger Hunt**

Name ____________________

EXPLORATION WORKSHEET

Use the States data file to answer the following questions.

1. How many states begin with the letter "M"? ____________
2. What state's population grew the fastest? (Name the state.) ______
3. Name the state that had a falling population. ____________
4. What is the *area* of the largest state of the U.S.? ____________
   What is this state's *population*? __
5. *How many* states are larger in area than Oregon? ____________
6. Name two states that are larger in area than Oregon. ____________
7. What is the capital of North Dakota? ____________________
8. What *city* has the largest population in the U.S.? ____________
9. What *state* has the smallest "largest city"? ____________
10. What state's largest city gets the most rain? ____________
11. What state's largest city gets the least rain? ____________
12. What state was admitted to the U.S. the same year as Florida? ______
13. Write your own question and answer.

*Figure 1.*
*From* Teaching Thinking Skills with Databases.

databases. The computer and a printer form a single or one of several learning centers in a classroom. Student groups of two or more rotate to the computer while other students are working at their desks or at other centers. This approach requires extra planning as the teacher must think about two or more activities going on at one time. All of the usual advice for this approach applies, such as designating and training some student experts and/or outside volunteers.

## Suggested Activities

One method of introducing databases to students is by demonstrating some of their advantages. Possibilities include:

- Speed—Compare the time it takes people to alphabetize or numerically order data to the computer's time for arranging data;
- Quantity—Show students how much information a data file can hold by browsing through a large file such as *MECC Dataquest: The Fifty States* or *The Power of Nation States*;
- Versatility—Show several different types of files such as a mailing list, a geography file, or a budget; and
- Flexibility—Sort and display a file in a variety of ways, for example, alphabetically and numerically by different fields.

A number of methods can help you introduce a particular database to students. **Browse and Question** involves slowly browsing through each record as students look for interesting facts, oddities, and relationships. Stop when a student sees an item of interest or when someone wants to ask a question. One student in a recent class stopped me to ask why Virginia was in the South region while West Virginia was in the Mid-Atlantic. This led to an important, motivating discussion that began with "Who assigns states to regions, anyway? And why?" and ended with a brief exploration of how the Civil War split some states and even families.

A **Scavenger Hunt** can be done with the whole class, as a learning center activity for small groups, or in the lab. Make a work-

Name(s) ________________________________________

PLANNING AND USING A REPORT

1. Write your question, problem or hypothesis.
2. Do you want every record in the file in your report? ________
   (If YES, skip to number 3.)
   a. Which category do you want to limit? ________
   b. Which limiter? Circle one:
      equals
      is greater than
      is less than
      is not equal to
      is blank
      is not blank
      contains
      begins with
      ends with
      does not contain
      does not begin with
      does not end with
   c. What is the information you want to match? ____________________
   d. Do you want a "second tier" selection? ________ If so, will it be an AND or an OR selection? ________ List the second category, limiter, and limiting word or number below.
   e. Do you want a "second tier" selection? ________ If so, will it be an AND or an OR selection? ________ List the second category, limiter and limiting word or number below.
3. List the categories you want to include in the report. Put them in order. Beside each category, write how many spaces it will have on the report.
4. Which category do you want your list sorted by? ____________________
5. What kind of order: A to Z, Z to A, 0 to 9, 9 to 0? ____________________
6. Will you print the report to the PRINTER or SCREEN? ______________
7. Use this plan to print your report at a computer station.

—AFTER PRINTING—

What did you learn from the report? What is the answer to your question or problem? Does your report support your hypothesis? Explain.

*Figure 2.*
*Preprinted Report. From* Teaching Thinking Skills with Databases.

sheet of questions that have answers in the data file (see Figure 1). Have students or student partners take turns telling the computer operator (teacher or student) which records to put on the screen, how to arrange the data, and so forth. Everyone records answers on their own worksheets as they discover them on the screen.

Games are an effective way to practice knowledge of database content and manipulation. To play the **Fact Game**, divide the class into two teams. Have each team make up 10 questions with factual answers they believe are in the data files. Write the questions on 3 X 5 cards. Members of Team 1 draw one of their cards and read it. Team 2 uses the database to try to answer the question. Team 1 checks the answer. If the answer checks out, Team 2 gets a point. If it is wrong, no points. If the answer is not in the file, subtract 1 from Team 1's score. Continue until all questions are answered.

The **Attribute Chain Game** also requires dividing the class into two teams. Team 1 calls out the name of a record in the data file. Team 2 names another record that they think has an attribute in common with Team 1's. Students check the answer on the computer. Team 1 names a record with an attribute in common with Team 2's. Check. Records already named are out of play. The team that stumps the other team wins. In a States file, for example, if the first team calls out California, Team 2 might name Oregon because the two states are in the same region. Next Team 1 might name Maine, whose largest city, Portland, matches that of Oregon. For a variation, students or individuals can try to make chains that include all the records.

The next two activities use databases to develop higher order thinking.

Use **preprinted reports** to analyze data. Before class, prepare and print out a database report including data that illustrate an important point from the curriculum. Develop questions that require students to compare and contrast fields, find relationships, and test hypotheses. Duplicate a copy for each student or team and have them analyze it in class discussion, on a worksheet, or in a paragraph or two. Examples might include a list of animals with their body weights and lifespans, or perhaps a report on countries showing average income, population density, and infant mortality.

Using the data file to answer questions and test hypotheses becomes both a whole class and a learning center activity. First have the class brainstorm a list of questions to be answered and/or hypotheses to be tested with the data file. One way to help students generate ideas is to browse through the data file while focusing on one category and its relationship to other categories. You might arrange *The Power of Nation States'* Literacy field from high to low, for example, and as you browse have students watch Gross National Product and Political System looking for patterns. Use a planning sheet (see Figure 2) or a similar worksheet as an overhead transparency to plan the report to be printed. Then have students use the computer one at a time to generate their reports. reports.

**Build a Class Data File**. When a class is doing research on a subject area, each student can enter some of the data he or she collects into a collective data file. Students see the importance of their research when it becomes an integral part of the whole class' study. Too often, student research is forgotten once the grade is on the paper. But having the information in a data file allows students to use higher order thinking skills to analyze it. Be sure to plan the file before students start their research to assure that students collect all the information they will need.

## The Teacher's Role

As with word processors, there are no bells and whistles in database programs. Self-motivation comes after students discover what can be done. In the beginning the teacher will need to provide motivation in the form of strokes and reassurance that the skills being learned are of value. Lists of numbers can be pretty numbing to look at for novice databasers. One way around this is to assign data to categories such as "high," "medium," and "low," and to enter those words rather than the numbers into the data file. Instead of listing per capita income, for example, you could designate states with average personal incomes over $17,000 as high, $14,000-17,000 as medium, and below $14,000 as low. A cluster of high income states might be easier for students to analyze than a series of numbers.

A database is just a collection of data. No matter how usefully sorted and selected the information is, it needs *humans* to analyze and evaluate it. It is tempting to accept the information as the cold, hard facts and forget two things:

- Facts are rarely objective; and
- There very real people behind the facts.

Unemployment figures, for example, represent thousands of people who desperately need jobs. It is up to the teacher to help the students put the facts in perspective.

The key to perspective is **debriefing**. Each analysis, each conclusion drawn from data, must be accompanied by conferences or whole group discussions that help students gain perspective on the results. Some questions a teacher might ask during debriefing conferences include:

- What is the answer to your question?
- Does the report seem to support your hypothesis?
- Can you point out some data in your report that seem to support the hypothesis?
- Can you point out some data that seem to refute the hypothesis?
- Could you make a new hypothesis based on the data?
- What is your opinion about this topic now that you've examined it?
- Who might be interested in the results of your report? Could the results help anyone?
- What was your strategy for using the database to answer your question?
- Are any of the data suspect? How do you think they were gathered? Where could mistakes have been made?
- Can you learn anything from data that show no relationship between certain categories?
- Do your results raise more questions? How could they be answered? Are any of these questions important and interesting enough to examine for a project?

## Conclusion

Databases may not be one of the types of programs you think of when planning to use one computer in a classroom. But it *is* possible to use them there, and are they ever worthwhile! Of course, getting students to analyze and evaluate information is wonderful, but maybe the real measure of the success of using databases with students is the *"Aha's* per class period." And the *Aha's* are definitely up!

---

*[Jim Watson, Edgewood/Evergreen School, 577 E. 46th Ave., Eugene, OR 97405.]*

*[This article excerpted from* Teaching Thinking Skills with Databases, *which*

*includes lesson plans, worksheet and transparency masters, and data disks. Available from ICCE, University of Oregon, 1787 Agate St., Eugene, OR 97403-9905.]*

**References**

Bailey, S. (1986). The "why's" of instructional computing. *The Computing Teacher, 13*(8), 54-57.

Hannah, L. (1987). Teaching data base strategies. *The Computing Teacher, 14*(9), 16-21.

Hunter, B. (1983). *My students use computers* (pp. 245-262). Reston, VA: Reston Publishing Co.

Hunter, B. (1985). Problem solving with data bases. *The Computing Teacher, 12*(8), 20-27.

Joyce, B., & Weil, M. (1980). *Models of teaching*. Englewood Cliffs, NJ: Prentice-Hall.

Sadler, W. A., Jr., & Whimbley, A. (1985, Nov.). A holistic approach to improving thinking skills. *Phi Beta Kappan*, pp. 199-203.

Swett, S. (1985, May-June). All-America data files. *Teaching and Computers*, pp. 18-25.

**Software**

*MECC Dataquest: The Fifty States*. Apple II Series, $55. MECC, 3490 Lexington Ave. N., St. Paul, MN 55126-8097; ph. 612/481-3500.

*The Power of Nation States. AppleWorks* data files (*MSWorks* in press); $59.95 with classroom license, $95 with site license. ICCE, University of Oregon, 1787 Agate St., Eugene, OR 97403-9905; ph. 503/686-4414.

# GORP on Disk: A High Tech Touch with the Out-of-Doors

*by*
***Elaine Gray***

Dorene walks into her classroom in her Redwings and kerchief, a drinking cup hanging from one corner of her large pack. As she empties the backpack on a table at the front of the room, she chats about hiking up to the Sierra, sitting around a campfire, fishing for trout in a brook, and sleeping under the stars. She ignores the curious questions of the children, "Mrs. Zyss, What *are* you doing?" and continues to quietly talk about her experiences in the out-of-doors. When everything including the Buck knife from her belt are on the table, she pauses and looks at the students, then looks back to the table, hoping they will take the clue. Then she starts loading the pack again, reminiscing about the time her "bear bells" scared a large one away, how it's always good to carry the snake bite kit, even in the winter, and how food tastes so much better cooked over an open fire.

When the pack is loaded again, Dorene becomes Mrs. Zyss, taking charge of the activity to follow. "All right, class, here's a card with an animal on it," she states as she passes one out to each student. "There are signs posted with each animal in various places around the room. Take your card, move to your group, and get ready for what I want you to do." Quickly and effectively, Dorene has formed cooperative learning groups to work together throughout the unit to follow. When the children are seated in their new groups, Dorene instructs them to make one list of each thing she carried in the backpack. After a few minutes, lists are compared, the items in the pack are again removed and explained, and the group with the longest and most correct list is rewarded with pieces of beef jerky.

Thus begins our unit, "GORP on Disk: A High Tech Touch with the Out-Of-Doors." As individuals, Dorene Zyss, Rosaleen Doerfler, and I had strengths and interests we wanted to combine in a meaningful unit for the children we teach. We wanted our students to learn about the ecology of the surrounding area and to practice skills in word-processing and database use. Following the guidelines of the Bay Area Writing Project, we knew that good writing requires knowledge of content in a subject. We also decided that a database would be a good tool for helping students organize information about the variety of environments in California, including desert and mountain wilderness, seashore, and river valleys.

Both Rosaleen and Dorene teach middle elementary students in schools which qualify for Chapter 1 and state funds for the economically disadvantaged. These fourth and fifth graders live in West Sacramento, a small city in the shadow of the State Capitol. Generally, the children have had very little experience outside their hometown, even though the mountains and ocean are only a short distance away. Few have any first-hand knowledge of the wonderful array of climates and recreational paradises that California has to offer. Many of our ethnic minority children are new to the state and the country. On the technological side, most have not used computers to organize data, and have had limited experience with word processors.

The GORP Unit (named after the backpackers' raisin-and-nut snack food) can be used over an entire year, given student interest and teacher resources. However, our plan is structured into a two-week presentation which takes the children through each step from information-gathering and organization to writing.

The unit has several parts:

1. The introductory set, "A Visit From the Friendly Outdoorswoman";
2. Introducing the database concept;
3. Immersing in content through videotapes, books, computer simulations, and guest lectures;
4. Fleshing out the database with content

## High Tech Touch With the Out-of-Doors

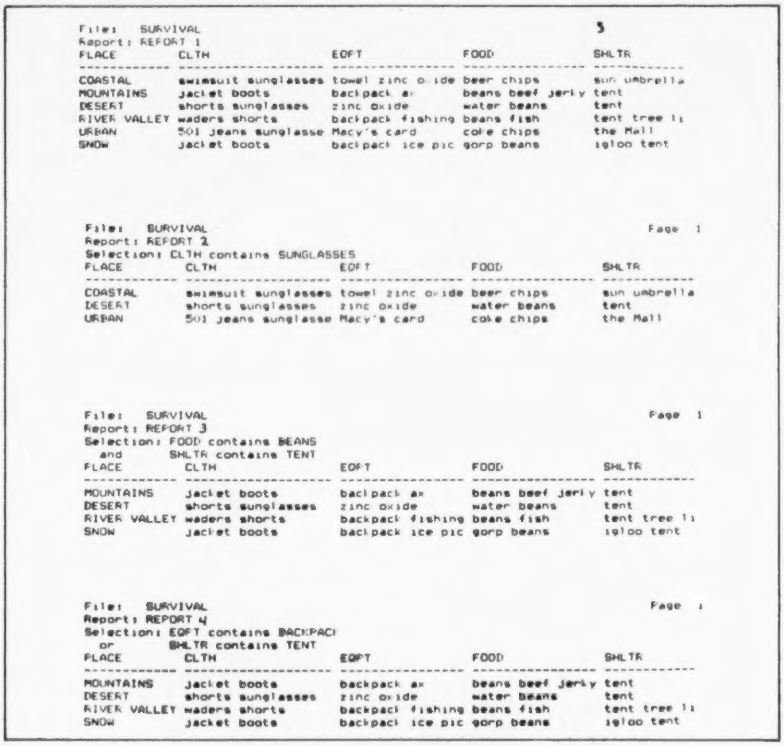
*An Integrated Language Arts, Social Studies, and Science Unit.*

**Teacher Objectives**

1. To integrate several disciplines into a meaningful unit.
2. To provide urban children with a better awareness of the variety of recreational areas in their state.
3. To teach writing skills, both on- and offline.
4. To teach "organized list making"; database.
5. To motivate children to prepare themselves for an outdoor camping experience.
6. To integrate technology into the curriculum.

**Possible Student Objectives**

1. Language Arts
   - a. The students will write as a group, using story starters, and on their own. They will revise their work and share it with others.
   - b. The students will use data they have generated as a basis of information about their stories.
   - c. The students will write about a topic (the environment) that is important to them, and to our state and nation.
2. Social Studies
   - a. The students will learn more about California, and how its climate and terrain influence population growth and recreation.
   - b. The students will learn how appropriate food, shelter, clothing, and tools are crucial in a survival situation.
   - c. The students will learn thinking skills when working with the simulation software.
   - d. The students will generate and use more than one database in their study of this unit.
3. Science
   - a. The students will name four different climatic zones in California.
   - b. The students will name predators and typical flora and fauna in each of the four zones.



```
File:   SURVIVAL                                                      5
Report: REPORT 1
PLACE        CLTH                EQPT             FOOD             SHLTR
------------ ------------------- ---------------- ---------------- ------------
COASTAL      swimsuit sunglasses towel zinc oxide beer chips       sun umbrella
MOUNTAINS    jacket boots        backpack ax      beans beef jerky tent
DESERT       shorts sunglasses   zinc oxide       water beans      tent
RIVER VALLEY waders shorts       backpack fishing beans fish       tent tree li
URBAN        501 jeans sunglasse Macy's card      coke chips       the Mall
SNOW         jacket boots        backpack ice pic gorp beans       igloo tent


File:   SURVIVAL                                                      Page   1
Report: REPORT 2
Selection: CLTH contains SUNGLASSES
PLACE        CLTH                EQPT             FOOD             SHLTR
------------ ------------------- ---------------- ---------------- ------------
COASTAL      swimsuit sunglasses towel zinc oxide beer chips       sun umbrella
DESERT       shorts sunglasses   zinc oxide       water beans      tent
URBAN        501 jeans sunglasse Macy's card      coke chips       the Mall


File:   SURVIVAL                                                      Page   1
Report: REPORT 3
Selection: FOOD contains BEANS
  and      SHLTR contains TENT
PLACE        CLTH                EQPT             FOOD             SHLTR
------------ ------------------- ---------------- ---------------- ------------
MOUNTAINS    jacket boots        backpack ax      beans beef jerky tent
DESERT       shorts sunglasses   zinc oxide       water beans      tent
RIVER VALLEY waders shorts       backpack fishing beans fish       tent tree li
SNOW         jacket boots        backpack ice pic gorp beans       igloo tent


File:   SURVIVAL                                                      Page   1
Report: REPORT 4
Selection: EQPT contains BACKPACK
  or       SHLTR contains TENT
PLACE        CLTH                EQPT             FOOD             SHLTR
------------ ------------------- ---------------- ---------------- ------------
MOUNTAINS    jacket boots        backpack ax      beans beef jerky tent
DESERT       shorts sunglasses   zinc oxide       water beans      tent
RIVER VALLEY waders shorts       backpack fishing beans fish       tent tree li
SNOW         jacket boots        backpack ice pic gorp beans       igloo tent
```

*Figure 1*. AppleWorks *database report.*

learned;

5. Transfer of the wall database to the computer; and
6. Writing class, group, and individual stories based on information contained in the database.

After the introduction, the class constructs an outdoor survival database, using butcher paper pinned to the wall. The categories on one axis are Food, Tools, Clothing, Shelter, Miscellaneous; the other axis lists a number of California environments; Mountain, Desert, Urban, River Valley, and Seashore. This skeleton database gives the students the advanced organizers with which to filter information gleaned from an immersion in the content. We pose questions as we guide students to complete the butcher paper database: "What kinds of tools would be useful in almost every environment?" "How do food requirements change as you prepare for a mountain trip?" "How would you plan for a trip in which you had to carry all your gear on your back?"

The students are immersed in content through class discussion, reading aloud, slide, film, and video presentations, classroom posters, guest speakers from the Department of Fish and Game or the Hug-a-Tree program, and computer simulation games such as *Oregon Trail*, *Jenny's Journey*, *Cave Girl Clair*, and *Odell Lake*.

To give the students practice in using a computer database, they transfer the information on butcher paper to either *Friendly Filer* or *AppleWorks* format. Our choice of *Friendly Filer* was based on its ease of use for younger students and availability in each elementary school through California AB 803 grants. *AppleWorks* is more sophisticated and allows the students to sort the data in a variety to ways, such as tools needed in many outdoor environments, appropriate clothing to take on any outdoor trip, or a list of everything needed for a specific area, such as the desert.

After immersion in content and practice with the database, we introduce story-starters based on the concept of invention in the wilderness. Our starters each present a situation in which our travelers have encountered difficulty and must rely on their supplies and imagination to save the day. These story starters can be used with a variety of word processing programs; however, *FrEdWriter* offers the ability to present prompted writing directly on disk.

First, the class writes a story together using a story-starter. Then each cooperative group constructs a story based on one ecological area. The stories are read and rewritten several times using the California Writing Project technique of "response groups" to help the children edit and improve their work.

After experience finishing stories, the students are invited to create story-starters for each other, and then to write a complete story themselves. Information used in the stories correlates with what the children have learned through creation of the database.

We strongly believe that good writing is dependent on real involvement in the subject matter, and that this unit offers the children information on a topic that is both highly motivating and important. As we watch the students troop off to a week of camp as sixth graders, Rosaleen, Dorene, and I are confident that we have better prepared them for the experience, as well as helped them appreciate the wonderful recreational opportunities our area offers.

(Dorene Zyss, "The Friendly Outdoorswoman" whose love of nature not only inspired this unit and article, but also the lives of the many children she taught in her career in Washington Unified School District, passed away this fall. Dorene will be remembered in our hearts every time we plan for an excursion in the out-of-doors.)

---

*[Elaine Gray, Director of Curriculum and Instruction, Dos Palos Joint Union School District, 2041 Almond Avenue, Dos Palos, CA 93620; Rosaleen Doerfler, Alyce Norman School, Anna Street, West Sacramento, CA 95691.]*

**Software:**

*Oregon Trail* and *Odell Lake*, MECC Software, 3490 Lexington Avenue North, St. Paul, MN 55112.

*Friendly Filer*, Grolier Electronic Publishing, Sherman Turnpike, Danbury, CT 06816.

*Cave Girl Clair and Jenny's Journey*, Rhiannon Software, Addison-Wesley Publishing, One Jacob Way, Reading, MA 01867.

*AppleWorks*, Claris Software, 440 Clyde Ave., Mountain View, CA 94043.

*FrEdWriter*, CUE SoftSwap, P.O. Box 2087, Menlo Park, CA 94026.

*Magic Slate*, Sunburst Communications, 39 Washington Ave., Pleasantville, NY 10570.

**Literature**

Taylor, Theodore (1969). *The cay*. New York: Doubleday.

George, Jean (1972). *Julie of the wolves* New York: Harper Jr. Books.

O'Dell, Scott (1960). *Island of the blue dolphins*. Boston: Houghton Mifflin.

George, Jean (1967). *My side of the mountain*. New York: Dutton.

Mowat, Farley (1963). *Never cr wolf*. Boston: Little, Brown.

**Videos:**

*California Dreams*, KOCE, P.O. Box 2476 1571 Gothard St., Huntington Beach, C 92647-9977.

*Bioscope*, Agency for Instructional Technology, Box ., Bloomington, IN 47402

*Community of Living Things*, WHRO-T Hampton Roads Educational Telecommunications Association, Inc., 5200 Hampton Blvd., Norfolk, VA 23508.

*Know Your World*, ACCESS Networ Media Library, 295 Midpark Way S Calgary, AB T2X 2A8.

### Sample Story Starters

1. Jim and I had been friends for years, but our relationship was undergoing some strain after our first night in Death Valley. Neither of us had ever been there before. Before our trip, we packed, remembering that water was very scarce there. Jim said he thought we probably wouldn't need a tent, and that it would be great to sleep under the stars.

After a night of the freezing cold temperatures, I wanted to scream "I told you so," but my better nature kept trying to invent some solution. I looked at Jim, whose mind also seemed preoccupied.

2. The four of us huddled glumly around the small campfire. The vastness of the Alaskan wilderness weighed heavily on our shoulders. Before leaving Los Angeles we had studied the Yukon Territory and the equipment we would need to survive a polar trek. Calling on experts for advice, we thought we were ready for the trip.

Although we had brought the proper equipment with us, we were not mentally prepared for what faced us. At first it was the incredible silence that awed us. As much as we chatted and joked, it did not dispel the utter stillness of everything. But that was not the problem that faced us now. The incredible whiteness of the environment had affected our eyes, despite the expensive Ray-Bans that sat on our noses. Snow blindness ha d put us off our track.

Not sure of our exact location, we now sat as mutely as the trees around us.

3. The water rushed past my knees, angry that I dare to step into its path. But there was no possible chance that I was going to relinquish my hold on the best rainbow trout fishing hole this side of the Sierra Nevada. My waders protected me from the wrath of the river and I relished the thought of being master of the elements.

The river was not offering its fish easily, and as the afternoon lengthened into evening I began to wonder about dinner. Oh, sure, I had caught a beauty of a trout, but it was not enough to feed the family back at the camp.

I moved slightly to the west but it was a fateful move for the river was just waiting for me. Pulling my fishing line taut, the river battled for my pole. My resistance was useless. The strength of the river was too much. The snap of my pole brought fear to my heart. Fish was the only food we had planned for and now the means had been severed.

Who was the master now?

4. This was going to be the best weekend ever, I thought as I raced down toward the beach. The sun was out, the sky was clear, and the air felt wonderfully warm on my cool skin. I scanned the horizon and spotted a familiar rocky outline jutting into the water. The tide was out and I knew just where the cave could be found Without hesitation, I dropped my beach towel and sunglasses o the sand. After all, my friends would be coming along in a momen and they knew why I wanted to come here. So off I ran in th direction of the crashing waves.

# COMMAND INDEX

## Chapter 1 The Word Processor

| *Task* | *Page* | *Command* |
|---|---|---|
| Using the Overstrike Cursor | 8 | Open-Apple E |
| Deleting Blocks of Text | 9 | Open-Apple D |
| Moving Blocks of Text | 13 | Open-Apple M |
| Finding and Replacing Text | 16 | Open-Apple R |
| Printing a Word Processor File | 20 | Open-Apple P |
| Setting and Clearing Tab Stops | 22 | Open-Apple T |
| Setting Boldface and Underline Commands | 27 | Control B<br>Control L |
| Using the *AppleWorks* Ruler | 28 | Open-Apple 1-9 |
| Copying Text within a Word Processor File | 29 | Open-Apple C |

## Chapter 2 Printer Options

| *Task* | *Page* | *Command* |
|---|---|---|
| Margin Settings | 2 | LM, RM, TM<br>Printer Options<br>(Open-Apple O) |
| Centering a Title | 4 | Control C<br>CN Printer Option<br>(Open-Apple O) |
| Changing the Size of Print | 6 | CI Printer Option<br>(Open-Apple O) |
| Calculating What Will Be Printed Per Page | 7 | Open-Apple K |
| Setting "New Page" Markers | 8 | Control P<br>NP Printer Option<br>(Open-Apple O) |

| | | |
|---|---|---|
| Changing a File Name | 12 | Open-Apple N |
| Copying and Moving Text from the Clipboard | 17 | Open-Apple M |
| Moving Text to the Clipboard | 18 | Open-Apple M |
| Quickly Switching to Another File | 34 | Open-Apple Q |
| Setting Margins | 21 | LM, RM<br>Printer Options<br>(Open-Apple O) |
| Modifying a Tab Ruler | 22 | Open-Apple T |
| Creating Additional Tab Rulers | 23 | Open-Apple T |
| Printing Page Numbers | 26 | PP, FO, HE<br>Printer Options<br>(Open-Apple O) |
| Skipping Lines | 29 | SK Printer Options<br>(Open-Apple O) |
| Adjusting Margin Settings for Illustrations | 31 | LM, RM<br>Printer Options<br>(Open-Apple O) |
| Justifying Right Margins | 31 | JU Printer Options<br>(Open-Apple O) |
| Copying Text Between Word Processor Files | 33 | Open-Apple C |
| Calculating Pages | 35 | Open-Apple K |
| Stopping the Printer to Enter More Text | 35 | EK Printer Option<br>(Open-Apple O) |
| Pausing the Printer After Each Page or at a Particular Place | 36 | PE, PH<br>Printer Options<br>(Open-Apple O) |
| Changing a Page Number | 36 | PN Printer Options<br>(Open-Apple O) |
| Setting a Multi-Line Footer | 38 | FO Printer Option<br>(Open-Apple O) |
| Adjusting for both Single and Double Spacing | 39 | SS, DS<br>Printer Options<br>(Open-Apple O) |

| | | |
|---|---|---|
| Working with Word Wraparound, Indenting Lines | 40 | IN Printer Options (Open-Apple O) |
| Setting Markers | 42 | SM Printer Options (Open-Apple O) |
| Changing a File Name | 42 | Open-Apple N |
| Finding and Replacing Text | 43 | Open-Apple R |
| Using the Find Command | 44 | Open-Apple F |
| Reviewing Word Processor Commands | 45 | Open-Apple ? |

## Chapter 3 The Spell Checker

| *Task* | *Page* | *Command* |
|---|---|---|
| Verifying the Spelling | 3 | Open-Apple V |

## Chapter 4 The Spreadsheet

| *Task* | *Page* | *Command* |
|---|---|---|
| Editing Spreadsheet Information | 5 | Open-Apple B<br>Open-Apple U<br>Open-Apple D |
| Changing Column Widths | 7 | Open-Apple L |
| Saving a Spreadsheet File | 8 | Open-Apple S |
| Entering and Copying Formulas | 12 | Open-Apple C |
| Changing the Value Layout so Decimal Points Line Up | 14 | Open-Apple L |
| Changing the Label Format to Center Column Headings | 15 | Open-Apple L |
| Arranging Spreadsheet Rows | 17 | Open-Apple A |
| Protecting One or More Cells | 19 | Open-Apple L |
| Getting a Quick Printout of Screen Information | 21 | Open-Apple H |
| Printing a Spreadsheet Report | 28 | Open-Apple P |
| Copying Formulas | 32 | Open-Apple C |
| Inserting Rows and Columns | 33 | Open-Apple I |

| | | |
|---|---|---|
| Editing Spreadsheet Information | 38 | Open-Apple U |
| Displaying Formulas on Screen | 39 | Open-Apple Z |
| Freezing Titles | 41 | Open-Apple T |
| Setting the Recalculation Order | 41 | Open-Apple V |
| Setting a Standard Format for Labels | 46 | Open-Apple v |
| Viewing the Spreadsheet Through Two "Windows" | 49 | Open-Apple W |
| Copying a Block of Information Within a Worksheet | 58 | Open-Apple C |
| Copying a Block of Information to the Clipboard | 59 | Open-Apple C |
| Copying Between Spreadsheet Files | 61 | Open-Apple C |
| Setting Printer Options | 64 | Open-Apple O |
| Printing to the Clipboard | 66 | Open-Apple P |
| Changing Column Widths | 74 | Open-Apple L |
| Inserting Rows | 74 | Open-Apple I |
| Setting a Standard Format for Labels and Values | 74 | Open-Apple V |
| Setting the Local Layout | 75 | Open-Apple L |
| Entering Formulas and Making Relative Copies | 79 | Open-Apple C |
| Entering Formulas and Making Relative/ No Change Copies | 79 | Open-Apple C |
| Printing a Spreadsheet Report | 83 | Open-Apple P |

## Chapter 5 The Database

| *Task* | *Page* | *Command* |
|---|---|---|
| Viewing Database Records | 3 | Open-Apple Z |
| Deleting Information | 5 | Open-Apple Y<br>Open-Apple D |
| Arranging Database Information by One Category | 7 | Open-Apple A |

| | | |
|---|---|---|
| Arranging Database Information by More Than One Category | 9 | Open-Apple A |
| Finding Certain Records | 11 | Open-Apple F |
| Changing the Column Width | 13 | Open-Apple L |
| Hiding a Category | 16 | Open-Apple L |
| Selecting Records: An Overview | 17 | Open-Apple R |
| Selecting Records: A "Guided Tour" | 17 | Open-Apple R |
| Copying One Record Within a Database File | 23 | Open-Apple C |
| Moving Categories on the Single-Record Screen | 23 | Open-Apple L |
| Creating a New Label Format | 25 | Open-Apple P |
| Setting Printer Options for One-Across Labels | 28 | Open-Apple O |
| Printing Labels to the Screen | 31 | Open-Apple P |
| Printing Multiple Columns of Labels | 32 | Open-Apple P |
| Setting Standard Values | 36 | Open-Apple V |
| Combining Database Files | 38 | Open-Apple C |
| Arranging Database Records | 39 | Open-Apple A |
| Selecting Records | 40 | Open-Apple R |
| Adding Database Categories | 41 | Open-Apple N |
| Inserting Database Records | 42 | Open-Apple I |
| Creating a Table Format | 45 | Open-Apple P |
| Changing Column Widths | 47 | Open-Apple --><br>Open-Apple <-- |
| Hiding Categories From a Report | 47 | Open-Apple D |
| Switching Category Positions | 47 | Open-Apple >, < |
| Setting Printer Options for a Table Report | 47 | Open-Apple O |
| Viewing the Report On Screen | 49 | Open-Apple P |
| Printing a Category Total | 50 | Open-Apple T |

| | | |
|---|---|---|
| Printing Group Totals | 51 | Open-Apple G |
| Creating a Report Title | 53 | Open-Apple N |
| Printing a Report to the Printer | 54 | Open-Apple P |
| Adding Database Categories | 57 | Open-Apple N |
| Changing Column Widths | 59 | Open-Apple L |
| Creating a Table Report from the Multiple Record Layout | 61 | Open-Apple P |
| Duplicating a Report Format | 62 | Open-Apple P |
| Setting up a Tables-Style Report with a Calculated Category | 64 | Open-Apple K |
| Editing a Calculated Category | 64 | Open-Apple K |
| Setting Up a Second Calculated Category | 66 | Open-Apple K |
| Combining Database Files | 69 | Open-Apple C |
| Changing the Name of a File | 70 | Open-Apple N |
| Selecting Records and Hiding Database Categories | 71 | Open-Apple R<br>Open-Apple L |
| Copying Records to the Clipboard for the Word Processor | 77 | Open-Apple P |
| Copying Information from the Clipboard | 72 | Open-Apple C |
| Setting Up a Table Report | 76 | Open-Apple P |
| Copying and Adjusting Information from the Clipboard | 77 | Open-Apple C |
| Copying Database Records to the Clipboard | 85 | Open-Apple C |
| Determining Which Categories to Include | 83 | Open-Apple L |

# GLOSSARY

**ASCII Files:** A standard method of representing characters by number values that enables files to be read by different programs and computers. Acronym for *American Standard Code* for *Informational Interchange.*

**Back up**: To make a copy of an entire disk or individual files.

**Blank:** To clear all contents from a spreadsheet cell.

**Block:** A group of consecutive characters in a word processor document; a rectangular formation of one or more cells in a spreadsheet.

**Boldface:** A format option that darkens text, usually by having the print head pass over the text twice.

**Calculate Page Breaks:** Word processor command (Open Apple-K) that calculates where each page begins and ends.

**Calculated Category:** A field in the database that is created by the user and computed in the tables report. Calculated categories perform mathematical operations with data from other categories and must be printed to a printer or the screen (Open Apple-P).

**Caret:** A triangle-shaped symbol (^) that is used in the word processor to indicate the beginning and the end of special formatting features (boldface, underline, etc.). It is also used in entering printer control codes to denote the end of your entry.

**Case Sensitive Text:** A mode used when searching for words or phrases in the word processor. In this mode upper case and lower case are treated as different from each other.

**Category:** The topic or heading under which data can be entered in a database file; commonly referred to as fields.

**Cell:** The intersection of a column and row in a spreadsheet where a label or value is entered.

**Cell Indicator:** The message at the bottom left-hand corner of the spreadsheet screen displaying the cell coordinate, layout, and contents for the selected cell.

**Cell Layout:** The selected text or value format assigned to a cell. A format (e.g., dollar with two decimal places) can be set for individual or groups of cells, or for all cells in a worksheet.

**Cell Reference:** An entry that refers to the contents in another cell. A formula containing a cell reference will perform the calculation based upon contents in the referenced cell. A list of cell references can be included in a cell.

**Clipboard:** A segment of memory (RAM) that is designated to hold text or data temporarily so that it can be easily copied or moved to other files.

**Copy:** To reproduce text or data so that it can be placed at other points within the same file or in other files. When you copy data, the original data remains intact.

**Control Character:** A nonprinting character that affects the way information is printed or displayed on the monitor.

**Cursor:** A position indicator on the screen that can be moved in various directions.

**Custom Dictionary:** A dictionary in the word processor to which you can add words that are not in the Main Dictionary. *AppleWorks* checks this dictionary also when it checks your spelling.

**Database:** A large collection of related data generally accessible by computer.

**Database Program:** An application program that helps you to input, organize, retrieve, and output information.

**Database Reports:** A component of a database program that enables users to format how data will appear when outputted to a printer (or the screen).

**Default:** Values for options that are selected for you by the program as the most likely choice. For example, *AppleWorks* includes default values for the size of the margins and the characters per inch. Users can almost always change the default values.

**Delete File:** To erase a file that is stored on a data disk.

**Desktop:** *AppleWorks*' metaphor for the workspace allocated for your files within the computer's memory (RAM). You may have up to 12 files on the desktop at one time.

**DIF:** Acronym for Data Interchange Format; a way of formatting a database or spreadsheet file. *AppleWorks* is one of the many programs that can send and receive DIF files.

**Directory:** A list of all the files and subdirectories on a disk.

**Field:** The generic topic or heading under which data can be entered in a database file; referred to as categories in *AppleWorks*.

**File:** A collection of information stored under a single name either on disk and/or in the computer's memory.

**Footer:** Text that is repeated on the bottom of each page. In *AppleWorks*, the footer is limited to one line.

**Form Letter:** A word processor document that merges information from a database file with standard text and enables mass mailings that vary from letter to letter.

**Format a Blank Disk:** To set up or initialize a disk so that it can store files. Various programs or operating systems require that disks be formatted in a particular way. This explains why disks formatted for *AppleWorks* cannot be read by other programs.

**Formats:** Set ways of printing out data. In the *AppleWorks* database there are two general formats: tables or labels.

**Function:** A built-in set of instructions for calculating values. Functions begin with the @ symbol.

**Global:** Referring to an entire document; not limited to the local component.

**Hardcopy:** A copy of a file printed on paper.

**Header:** Text that is repeated at the top of each page. In *AppleWorks* the header is limited to one line.

**Highlighted Text:** Text displayed on the screen with dark letters on a light background.

**Insert Cursor:** The edit mode in which typed characters "push" existing characters to the right rather than replace existing text. A blinking line indicates that you are functioning in this mode.

**Integrated:** A set of computer applications designed to be used together. *AppleWorks* is an integrated package. In an integrated program, many of the same commands can be used in each component and files can be moved among the components.

**Justified:** Word processor format in which the text is lined up both on the right and left margins. Also called full justification.

**Label:** A type of information in a spreadsheet file that contains strings of text that are usually used to describe the numeric data in the spreadsheet.

**Labels Report:** One of the two types of formats in the database. It features multiple line output that can be arranged according to the needs of the user. Mailing labels are created using this type of format.

**Layout:** In the spreadsheet, the layout refers to the way the labels and values are displayed; in the database, it refers to how a record appears on the screen.

**Line Feed:** A code telling the printer to move to the next line.

**Main Dictionary:** A dictionary in the word processor with 68,000 words on the 5.25-inch disk and 90,000 on the 3.5-inch disk that *AppleWorks* uses to check your spelling.

**Marker:** In the word processor, a "flag" that enables users to mark a particular spot and later find it using the "Find Marker" command. Markers are denoted by a caret and cannot be detected when the document is printed.

**Memory:** The computer's random-access memory. The Desktop uses whatever memory is free.

**Menu:** A list of options that can be chosen by selecting the menu name and pressing the Return key.

**Merge:** To combine two or more documents. Usually the term is used to describe combining database and word processor files to create a form letter via mail merge.

**Move:** To reproduce text or data so that it can be placed at other points within the same file or in other files.

**Multiple Record Format:** The type of screen display in the database in which each record appears on one line; a list format.

**No Change Copy:** A mode of copying within the spreadsheet in which the value being copied remains constant as it is copied from line to line; also referred to as absolute copying.

**Overstrike Cursor:** This cursor causes typed characters to replace existing ones at the same position. A blinking box indicates that you are in this mode.

**Pagination:** A feature that automatically numbers pages for you. In the word processor, you must set this up using the options menu; in the database and spreadsheet, pages are numbered for you.

**Paste:** To copy or move text or data into a document from the clipboard.

**Pathname:** A feature of the ProDOS operating system that identifies the pathway that the system must follow in order to locate a specific file. The pathname consists of names of a volume (disk), subdirectory (optional), and file separated by a slash (/).

**Platen Width:** The distance that the print head will travel across the printer. The default platen width for a standard printer in 8.5 inches.

**Prefix:** The volume name (and optionally the subdirectory name) that precedes the file name. Together these names make up the pathname in the ProDOS operating system.

**ProDOS:** Apple's latest operating system for the Apple II line of computers. *AppleWorks* operates under ProDOS.

**Program Disk:** The second *AppleWorks* disk (after the Startup Disk) that must be loaded in order to operate *AppleWorks*.

**Prompt:** A message on the screen telling the user what can or should be done next.

**Proportional Printing:** A mode of printing in which the space allotted for each character varies. In contrast, standard dot matrix print allocates the same amount of space for each character.

**RAM:** A computer's general purpose memory. RAM (Random Access Memory) is volatile; that is, programs and data stored in RAM disappear when the computer's power is turned off. The *AppleWorks* program and your *AppleWorks* data files are both stored in RAM during use, and saved on disks when the computer is not in use.

**Range:** A rectangular block of cells denoted by a beginning and ending point (e.g., C2...C22, or A5...B50).

**Record:** A collection of related data treated as a unit. Often a record contains all of the information pertaining to one person.

**Relative Copy:** A mode of copying cells in the spreadsheet in which cell names are adjusted so that the meaning of a formula remains the same from row to row or column to column.

**Remove File:** Refers to eliminating a file from the Desktop (RAM).

**Report:** A document containing some or all of the information in your database or spreadsheet. Reports may be displayed on the screen, stored on the clipboard for transfer to another document, or printed out.

**Report Format:** The way you arrange the information in your database report. You can have up to 20 different formats for a single database.

**Review/Add/Change:** The screen on which text is entered, changed, or deleted from an *AppleWorks* file.

**Ruler:** Divides a document into eighths. The Open-Apple 1 through 9 commands let you move the cursor through the file by eighths.

**Scroll:** Move information on the screen to bring new lines or columns into view.

**Single Record Layout:** A display mode in which all of the information pertaining to one database record is on one screen.

**Spelling Summary:** Counts the words in your document, tells the number of unknown words and how many corrections you made. It contains a list of the unknown words and their corrected spellings.

**Spreadsheet:** A sheet of paper containing information arranged in rows and columns.

**Spreadsheet Program:** An application program that enables calculations to be done to data arranged in rows and columns. Spreadsheet programs allow users to create formulas with variables, thus facilitating "what if" projections.

**Standard Value:** A value in the database that will be entered in each record by default. In the spreadsheet, standard values refer to standard procedures for formatting values and labels, setting column width, protection, and recalculation.

**Startup Disk:** The first disk necessary to load *AppleWorks* into the computer. It is then necessary to load the *AppleWorks* Program Disk.

**Subscript:** A print format in the word processor that allows text to be printed a half line below the standard line of text; often needed for mathematical and scientific notation.

**Superscript:** A print format in the word processor that allows text to be printed a half line above the standard line of text; often needed for mathematical and scientific notation.

**Tab Ruler:** Displays the current tab stops.

**Tables Report:** A database report format in which files are printed as a list with one record on each line.

**Text File:** A file consisting of nothing but text (no formatting) in ASCII codes.

**Unjustified:** Text printed so that each line begins at the left margin but is not lined up on the right margin. Some programs refer to this as left justified.

**Value:** Numeric data entered into a spreadsheet file. Numbers and formulas are examples of values.

**Volume Name:** The name given to a disk when it is initially formatted. The volume name is the first name in a ProDOS pathname.

**Word Processing Program**: An applications program that enables users to enter, edit, and print text.

**Wordwrap:** A word processing feature that automatically moves a word to the next line if it doesn't fit on the line in which it was entered.

**Zoom:** Allows users in each *AppleWorks* component to toggle between two screen displays. In the word processor it switches between viewing and not viewing formatting options; in the database it toggles between single and multiple record layout; in the spreadsheet it switches between formulas and value display.

# INDEX

Adding
  Categories (Database) ............... 5-41, 5-57
  Files to the Desktop ............... 1-1
  Printers ............... 0-8
  Words to Custom dictionary ............... 3-12
ASCII file
  Adding ............... 3-24
  And Mail merging ............... 6-28
  Creating ............... 6-24, 6-26
Arranging (sorting)
  Database records
    For label reports ............... 5-32
    For multiple categories ............... 5-10
    For table reports ............... 5-46, 5-80
    On one category ............... 5-7
    When grouping records ............... 5-51
  Spreadsheet rows ............... 4-17
    "Above and below" ............... 4-44

Boldface text (Word Processor) ............... 1-26

Caret symbols
  In Mail Merge documents ............... 6-5
  In Word Processor document ..... 1-26, 2-2, 2-27, 2-38
Case sensitive text ............... 1-17
Cell indicator (Spreadsheet) ............... 4-2, 4-3
Centering
  Spreadsheet labels ............... 4-15
  Word processor text ............... 2-4, 2-6
Changing
  Column width (Database) ............... 5-13, 5-51, 5-64
  Column width (Spreadsheet) ...... 4-7, 4-74
  File name ............... 2-12, 2-42, 5-72
  Page number (Word Processor) ............... 2-36
Characters Per Inch in
    Database reports ............... 5-48, 5-49
    Spreadsheet reports ............... 4-55, 4-66
    Word Processor documents ............... 2-3, 2-6, 2-47, 5-78
Clipboard (*See* Database, Spell Checker, Spreadsheet, Word Processor)
Column number indicator (Word Processor) ............... 1-22
Control key commands
  Control B (Boldface) (Word Processor) ............... 1-26
  Control C (Centering text) (Word Processor) ............... 2-4
  Control F (Full justification) (Word Processor) ............... 2-5, 2-32
  Control L (Underline) (Word Processor) ............... 1-26
  Control N (Normal justification) (Word Processor) ............... 2-5, 2-27
  Control P (Page break) (Word Processor) ............... 2-8
  Control R (Right justification) (Word Processor) ............... 2-5
  Control Y (Delete to end of line) (Word Processor) ............... 1-12
  Control Y (Delete to end of line) (Database) ............... 5-2, 5-35
Copying
  Database Records
    Between Database files .......... 5-39, 5-69
    To Spreadsheet ............... 5-85
    To Word Processor ............... 5-72
    Within a Database ............... 5-23
  Spreadsheet
    Between Spreadsheet files ............... 4-61
    Block of information ............... 4-58
    Formulas, no change ............... 4-32, 4-34
    Formulas, relative ............... 4-13, 4-32
    To Clipboard ............... 4-59, 4-60
    Within a Spreadsheet ............... 4-58
  Word Processor
    Between Word Processor files ........ 2-16, 2-33
    From Clipboard ............... 2-17
    To Clipboard ............... 2-16

Database
  Add file to Desktop ......................5-6, 5-56
  Arrange (sorting) records .....................5-7
  Categories
    Adding ....................................5-41, 5-57
    Calculated ......................5-63, 5-66, 5-80
    Changing name of ..................5-58, 6-11
    Deleting .........................5-28, 5-58, 5-84
    Entering ..........................5-2, 5-22, 5-35
    Hiding ..................5-16, 5-25, 5-28, 5-47
    Inserting ................................ 5-27, 5-58
    Inverse display for names.................5-25
    In Mail Merge ....................................6-3
    Justifying ........................................5-27
    Group for subtotals ...........................5-51
    Moving on single-record screen .......5-23
    Switching positions ........................ 5-49
    Time format .......................................5-9
    Totals ...............................................5-50
  Clipboard, copying to .........................5-72
  Clipboard, printing to .........................5-77
  Columns
    Subtotalling within ...........................5-51
    Totalling ...........................................5-50
    Width of ..............5-13, 5-15, 5-51, 5-59
  Combining files .........................5-38, 5-69
  Copy one record ................................5-23
  Creating from scratch ........5-1, 5-22, 5-35
  Cursor movement ................................5-4
  Dittoing an entry ...............................5-60
  Freezing titles ....................................5-40
  Layout
    Multiple record layout ......................5-13
    Single record layout .........................5-23
  Records
    Copying to Clipboard .......................5-38
    Copying within Database ................5-23
    Deleting ..............................................5-5
    Entering information ..........................5-3
    Examples displayed on
        layout screen ................................5-14
    Finding, anywhere ............................5-11
    Finding, specific in column ..............5-12
    Inserting ............................................5-42
    Selecting ...............................5-17, 5-80
    Standard values in ...........................5-36
  Reports
    Creating format from
        current layout ................................5-61
    Creating new label format ................5-25
    Creating new table format ................5-45
    Creating report title ..........................5-53
    Duplicating existing format ....5-32, 5-62
    Erasing existing format(s) ................5-58
    Getting existing format .....................5-76
    Into Mail Merge ........................6-3, 6-19
    Into Word Processor document .......5-72,
        5-76
Date
  In Word Processor ..............................2-10
Decimal points
  Lined up (Spreadsheet) ......................4-14
  Tabs (Word Processor) .............1-23, 2-25
Deleting
  Blocks of text
    (Word Processor) ..................1-10, 1-11
  Files from desktop ..............................3-26
  Information (Database) ........................5-5
  Printer options .......................................2-5
Delete key ................................1-4, 3-4, 4-6
Desktop
  Adding files to ..............1-1, 1-4, 1-9, 5-6
  Index .....................................................2-26
  Removing files from ..........................4-27
  Switching between files on ......2-16, 2-20
      2-33, 4-61, 5-38
  Working with files on ...........................4-4
Dictionary
  Custom
    Adding to the desktop .......................3-24
    Creating new ......................................3-27
    Deleting from the disk .......................3-26
    Editing ................................................3-25
    Selecting ............................................3-32
  Main ...........................................3-7, 3-11
Disk drive
  Adjusting location ...............................3-22
  Current location of ..............................3-30
  Viewing files on ..................................2-17
Double Spacing (Word Processor) ........2-39
Duplicate
  Report format (Database) .........5-32, 5-62

Editing
  Calculated category ............................5-64
  Custom dictionary ..............................3-25
End-of-page message ..............................2-8
Enter from keyboard printer option......2-35, 6-19
Entering
  Category names (Database)..................5-2
  Line of characters (Spreadsheet) ........4-76
  Number as label (Spreadsheet) .....4-2, 4-3
  Record information (Database) ...........5-3, 5-22, 5-35
Escape key
  When saving ........................................4-27
  With Spreadsheet.................................4-6

Filename, changing.............2-12, 2-42, 5-70
Finding
  In Database ...........................................5-11
  In Spreadsheet .....................................4-81
  In Word Processor ....................1-18, 2-44
Find and Replace (Word Processor) ........................1-16, 2-43
Footers (Word Processor) ............2-26, 2-38
Form letter (*see* Template)
Formulas (in Database reports—*see* Calculated categories)
Formulas (in Spreadsheet)
  Absolute cell reference ...........4-32, 4-36
  And arranging (sorting) ..........4-17, 4-44
  Copying..................................4-12, 4-32
  Editing .............................4-5, 4-19, 4-38
  Entering ............................4-3, 4-12, 4-30
  Relative cell reference ............4-13, 4-32
Freezing titles (Database).......................5-41
Freezing titles (Spreadsheet) .................4-40

Functions (*see* Spreadsheet)

Global formatting (Spreadsheet) ...........4-74
Grouping categories (Database) ............5-51
Hard copy of screen display.........4-21, 5-58
Headers
  In Database reports ...................5-30, 5-77
  In Spreadsheet reports ........................4-65
  In Word Processor ..............................2-26

Help menu
  Spreadsheet ..........................................4-2
  Word Processor ..................................2-45

Indenting text (Word Processor) ...........2-40
Insert cursor.............................................1-6
Inverse display for category names (Database)............................................5-25

Jumping between windows (Spreadsheet) ..............................4-50, 4-53
Justifying
  Categories (Database) .........................5-27
  Labels (Spreadsheet) ..........................4-16
  Text, margins (Word Processor) ........2-31
  Text, using tabs (Word Processor) .....1-23

Labels Report (Database)
  Creating ...............................................5-25
  Deleting categories/lines .....................5-28
  Justifying categories within.................5-27
  Moving categories around on .............5-27
  Printer options for multiple columns of labels ...............................................5-32
  Printer options for one-across ............5-28
  Printing category names ......................5-32
  Turning off top-of-page command .....5-32
Labels (Spreadsheet)
  Centering ..............................................4-15
  Entering......................................4-3, 4-10
  Justifying ..............................................4-16
  Protecting .............................................4-19
Left justify
  Labels (Spreadsheet) ..........................4-15
  Text (Word Processor) .......................1-23
Lines
  In mailing labels .................................5-30
  Skipping (Word Processor) ................2-29
Lines per inch (Word Processor) ...2-3, 2-29
Lines per page
  In Database reports ...................5-29, 5-30
  In Spreadsheet reports ........................4-65
List of cells (Spreadsheet) ......................4-24
Local formatting (Spreadsheet) .............4-75
Lookup Table ........................................4-50

Mailing labels
  Multiple columns 5-32, 5-34
  One-across column 5-28
Mail Merge
  Markers in Word Processor 6-3
  Putting records on Clipboard 6-3, 6-19
    From Reveiw/Add/Change screen 6-3
    From a table report 6-14, 6-23
  Preparing Word Processor 6-4, 6-23
  Printing document to printer 6-7
  Printing file to disk 6-22, 6-24, 6-28
Margins
  For Database reports 5-29
  For Spreadsheet reports 4-65
  For Word Processor documents 2-1, 2-3, 2-4, 2-31
Markers (Word Processor) 2-42, 6-5
Moving
  Blocks of text (Word Processor) 1-13
  Categories, single record (Database) 5-24
  Cursor (Database) 5-4
  Text from Clipboard (Word Processor) 2-17, 2-19
  Text to Clipboard (Word Processor) 2-18, 2-19
  Reports from Clipboard (Database) 5-40
  Reports to Clipboard (Database) 5-40
Multiple record layout (Database) 5-3

Naming
  Data Disks 0-6
  Database categories for merging 6-17
  Database reports 5-45
  Files 2-12, 2-42, 5-70
  Printers 0-8
New page (Word Processor) 2-8, 2-9
Numbering pages (Word Processor) 2-26

Overstrike cursor 1-8
Other Activities option 5-32

Pages (Word Processor)
  Calculating 2-7, 2-35
  Footer 2-26
  Header 2-26
  New 2-8, 2-9
  Numbers, changing 2-36
  Numbers, setting 2-26, 2-28
Paper length 2-1, 2-3
Pathname 6-24, 6-25, 6-26
Pausing printer 2-36, 6-20
Platen width 2-1, 2-3, 5-29, 5-34
Printer options
  For the Database 5-29, 5-34, 5-47
  For the Spreadsheet 4-64
  For the Word Processor 2-1
Printers
  Adding 0-8
  Installing 0-8, 0-11
  For Open-Apple hardcopy 0-11
  Removing 0-13
Printing
  Database label reports 5-22
  Database table reports 5-45, 5-55
  Mail Merge document to printer 6-8
  Mail Merge document to disk 6-22, 6-24, 6-28
  Spreadsheet reports 4-28
  Spreadsheet report to Word Processor 4-63
  Word Processor document 2-13
Protected cells (Spreadsheet) 4-19
Proportional print (Word Processor) 2-46

Quick printout 4-21
Quickly switching to another file
  (Database) 5-39
  (Spreadsheet) 4-62
  (Word Processor) 2-16, 2-20, 2-33

Range of cells (Spreadsheet) 4-24
Recalculation order (Spreadsheet) 4-41, 4-80
Relative copy (Spreadsheet) 4-12
Reports (Database)
  Creating label report 5-25
  Creating table report 5-45
  Duplicating existing format 5-32
  Erasing existing format 5-58

    - Getting existing format .................... 5-76
- Right justifying
  - Categories (Database) ......................5-27
  - Labels (Spreadsheet) ........................4-16
  - Text (Word Processor)...........1-23, 2-31
- Rulers (Word Processor).............1-27, 1-28

- Saving files
  - Database ............................................5-31
  - Several files at once..........................4-26
  - Spreadsheet .........................................4-8
  - Word Processor ...................................1-12
- Selecting
  - Custom dictionary ..............................3-22
  - Database records ......................5-17, 5-71
  - Screen menu options ...........................4-1
- Single Spacing (Word Processor) .........2-39
- Skipping lines ........................................2-29
- Spell Checker
  - Adding words to ..................................3-12
  - Custom dictionary.......................3-6, 3-22
  - Correcting in a list ..............................3-13
  - Getting suggestions..................3-13, 3-14
  - Ignoring words ....................................3-11
  - Main dictionary...........................3-7, 3-11
  - Method verification ............................3-34
  - Spelling summary
    - Complete ...........................................3-15
    - Having none ......................................3-21
    - On the clipboard ................................3-18
    - Selecting ............................................3-34
    - With no corrections ...........................3-20
  - Verifying all text ..................................3-5
  - V[illegible]g block of text ..........................3-4
  - Ve[illegible]g from a list ..........................3-10
  - Verifying one word ..............................3-2
- Spreadsheet
  - Add files to desktop ..............................4-9
  - Arranging (sorting)............................4-17
  - Arrow keys, using ........................4-3, 4-5
  - Bringing Database files into ...............5-85
  - Calculating
    - Manually ..........................................4-80
  - Cell
    - Blank ..................................................4-5
    - Editing........................................4-5, 4-6
    - Entering functions............4-3, 4-23, 4-24
    - Entering labels ..............................4-3, 4-10
    - Entering numbers as values ......4-3, 4-10
    - Entering values ....................................4-3
    - Finding ................................................4-81
    - Indicator .......................................4-3, 4-4
    - List of ..................................................4-24
    - Protecting ...........................................4-19
    - Range of ..............................................4-24
    - Reference, absolute .................4-32, 4-35
    - Reference, relative ..................4-12, 4-32
  - Clipboard use ............................4-59, 4-62
  - Columns
    - Deleting ..............................................4-34
    - Inserting..............................................4-34
    - Width of ...............................................4-7
  - Copying between files ........................4-61
  - Copying to Clipboard .........................4-59
  - Copying within worksheet .................4-58
  - Creating from scratch ...........................4-1
  - Cursor ....................................................4-3
  - Delete key...............................................4-4
  - Escape key ............................4-4, 4-5, 4-6
  - Formulas
    - Absolute cell reference ...........4-32, 4-35
    - And arranging (sorting) ..........4-42, 4-44
    - Copying..................................4-12, 4-32
    - Editing......................................4-5, 4-19
    - Entering.........4-3, 4-13, 4-19, 4-30, 4-38
    - Relative cell reference ......................4-12
  - Functions
    - Entering .............................................4-23
    - @AVG ...................................4-24, 4-31
    - @IF.....................................................4-47
    - @LOOKUP .........................................4-54
    - @MAX ................................................4-24
    - @MIN .................................................4-24
    - @SUM ................................................4-37
  - Help menu ..............................................4-2
  - Lookup table.........................................4-50
  - Printer options ......................................4-64
  - Printing
    - Into Word Processor document ........4-67
    - To Clipboard ......................................4-66
    - To Printer ...............................4-28, 4-83
  - Prompt ....................................................4-2

  Quotation mark ("), using ........... 4-3, 4-11
  Removing files from desktop ............ 4-27
  Rows
    Arranging (sorting) .......................... 4-17
    Copying ............................................ 4-59
    Deleting ............................................ 4-34
    Inserting ............................... 4-33, 4-74
  Saving .................................................... 4-8
  Titles ....................................... 4-41, 4-81
  Windows
    Jumping between .................. 4-50, 4-53
    Side-by-side .......................... 4-50, 4-53
    Synchronizing ................................ 4-50
Standard values
  For Database date format .................. 5-37
  For Database new entries .................. 5-36
  For Spreadsheet formatting ...... 4-42, 4-46, 4-74, 4-80
Switching
  Between drives ............................. 0-2, 0-3
  Between files on Desktop ................. 2-34, 4-62, 5-39
  Between layouts (Database) ................ 5-3
  Category positions (Database) ........... 5-47
  Printers for hardcopy print ................ 0-11

Table format (*see* Database, Reports)
Table Report (*see* Database)
Tab stops (Word Processor)
  Clearing ............................................. 1-22
  Column Indicator ...................... 1-22, 1-23
  Modifying tab ruler .................. 1-22, 2-22
  Preset tab ruler ................................. 1-22
  Setting
    Centering ........................................ 1-23
    Decimal ................................ 1-24, 2-25
    Left justified ................................. 1-23
    Right justified ...................... 1-23, 2-24
Template (Spreadsheet) ......................... 4-60
Template (Word Processor) .................. 2-12
Time
  In Word Processor ............................ 2-10
  In Database ......................................... 5-9
Top-of-page command .......................... 5-32

Underlining (Word Processor) .............. 1-26
Unjustified text (Word Processor) .......... 2-6

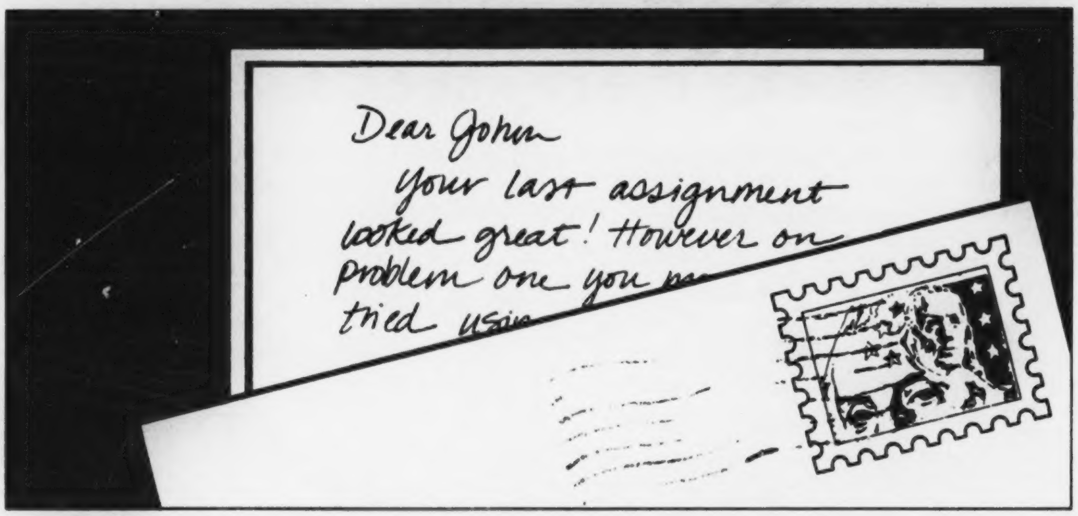
Value entries (*see* Spreadsheet)
Viewing
  Files on disk ......................... 1-1, 4-9, 5-6
  Formulas on screen ........................... 4-39
  Report on screen (Database) .............. 5-50
Widening columns
  In Database ............ 5-14, 5-15, 5-51, 5-59
  In Spreadsheet ............................. 4-7, 4-74
Windows (Spreadsheet) ........................ 4-49
Word Processor
  Adding to Desktop .............. 1-1, 2-1, 2-20
  Bringing Spreadsheet information into ............................... 4-63
  Boldface text ...................................... 1-26
  Calculating page breaks ............. 2-7, 2-35
  Centering text ................................ 2-4, 2-6
  Creating blank lines ............ 1-5, 1-7, 2-29
  Creating from an ASCII file .............. 6-26
  Creating from scratch ........................ 1-22
  Copy text
    Between documents ................ 2-15, 2-33
    Within a document .......................... 1-28
  Date ...................................... 2-10, 2-38
  Deleting
    Blocks of text ................................. 1-10
    Characters ........................................ 1-4
    Printer options .................................. 2-5
    To end of line ................................. 1-12
  End of page ........................................... 2-8
  Finding text ................................ 1-18, 2-44
  Footers .................................... 2-26, 2-38
  Indenting ............................................. 2-40
  Inserting text .......................................... 1-6
  Justifying right margins ..................... 2-31
  Justifying tabs ...................................... 1-23
  Mail Merge document ................. 6-4, 6-24
  Margins .................................................. 2-2
  Moving text
    Between documents .......................... 2-18
    Cursor word to word .......................... 1-7
    Within document ............................. 1-13

  Overstrike cursor .................................. 1-8
  New page ...................................... 2-8, 2-9
  Printer options
    Listed .................................................. 2-2
    Standard settings ................................ 2-1
  Printing ............................................... 1-20
  Removing file from desktop ............... 1-20
  Replacing text
    Case sensitive text ............................ 1-17
    Text ................................................... 1-17
  Return blots .............. 1-13, 1-14, 1-24, 2-2
  Time ................................................... 2-10
  Transferring text to Spreadsheet ........ 4-70
Word wraparound .................................. 2-40

Zooming
  Between layouts (Database) ................. 5-3
  To display formulas (Spreadsheet) ..... 4-39
  To display printer options
    (Word Processor) ...................... 1-24, 2-2
  To view category names/data for label
    reports (Database) ............................ 5-28

@AVG function ................. 4-23, 4-24, 4-36
@IF function ........................................ 4-47
@LOOKUP function ............................. 4-53
@MAX function .......................... 4-23, 4-24
@MIN function ............................ 4-23, 4-24
@SUM function ........................... 4-23, 4-36

# Finally, a long distance relationship that won't break your heart.



Dear John
Your last assignment
looked great! However on
problem one you
tried

**ISTE offers ten *Independent Study* courses that get to the heart of learning.**

Each course thoroughly covers the title material and is designed to provide staff development and leadership training. You correspond directly with the course's instructor by mail, and can receive graduate credit through the Oregon State System of Higher Education.

*Classes offered this year are:*

- Introduction to Logo for Educators (available for LogoWriter or Logo PLUS)
- Fundamentals of Computers in Education
- Long Range Planning for Computers in Schools
- Computers in Mathematics Education
- Computers and Problem Solving
- Introduction to AppleWorks for Educators
- Computers in Composition
- Effective Inservice for Instructional Use of Computers in Education
- Computer Applications for Educators: An Introduction to Microsoft Works
- Telecommunication and Information Access in Education

Register for classes independently or with a group. Districts enrolling six or more teachers receive a fee reduction for each person enrolled.

Courses range in price for 3-4 quarter-hours of graduate credit. You have one year to complete your course.

Start a great long distance relationship today with an ISTE *Independent Study* Course.

Request an *Independent Study* course brochure. Write or call:

ISTE, Independent Study CourseDept.,
University of Oregon, 1787 Agate St.,
Eugene, OR 97403
ph. 503/346-2412

Works users—seek help.

Practical and useful support is what you'll find in *Microsoft Works for the Macintosh: A Workbook for Educators* by Keith Wetzel. Step-by-step instructions thoroughly cover all the capabilities of MS *Works* including macros, spellchecking, and multiple column text and labels for Version 2.0. While you are learning, you'll create usable transparencies, letterhead, and other templates for use in your classroom or at home.

*Microsoft Works for the Macintosh: A Workbook for Educators* is available for both version 1.1 and 2.0.

Version 1.1 and 2.0 are available. Please specify which version you need when ordering.

ISTE, University of Oregon, 1787 Agate St., Eugene, OR 97403 ph. 503/346-4414.

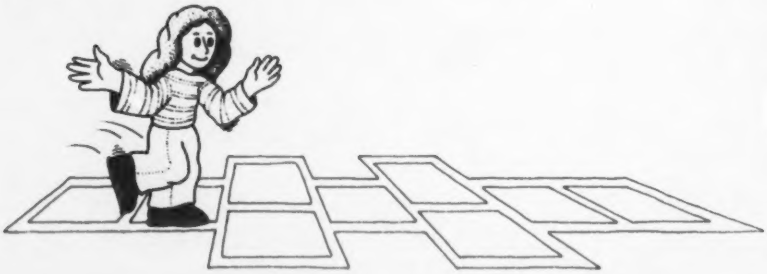
**Get help today. *Microsoft Works for the Macintosh: A Workbook for Educators* from ISTE.**

We've taken the first step for you. Randy Boone pulls together the best research, position papers, product reviews and lesson plans for teaching writing.

Recent articles from *The Computing Teacher* and *The Writing Notebook* will take you yet another step closer to understanding the issues, problems, and solutions surrounding the writing process.

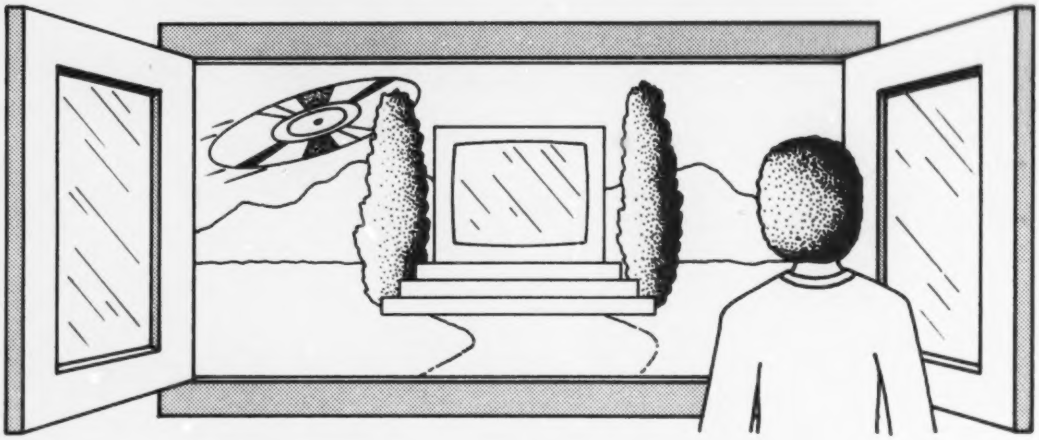
Use ***Teaching Process Writing with Computers*** in your university classes, inservice workshops, and K-12 classrooms. Your students will make great strides.

For pricing or to order, contact: ISTE, University of Oregon, 1787 Agate St., Eugene, OR 97403; ph. 503/346-4414.



*Teach process writing*—step by step.

# A Window on the Past.



# A Vision of the Future.

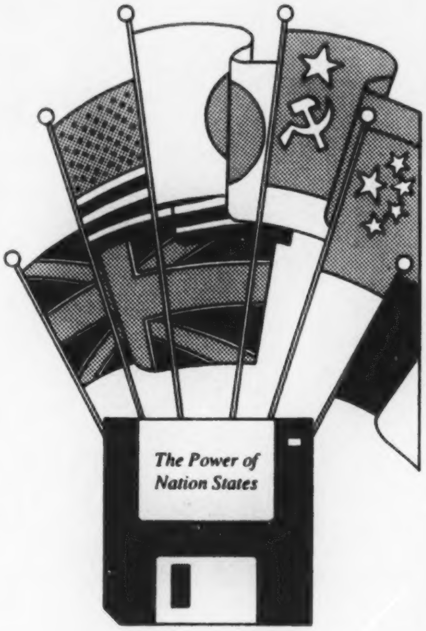
Imagine having the past four years of educational computing research at your fingertips. Plan your future based on the lessons of the past.

After four years of reviewing research for her column in *The Computing Teacher*, Betty Collis identifies key trends and issues of vital interest to all computer using educators. As an additional resource, she has compiled an extensive bibliography to aid readers in further investigation.

*The Best of Research Windows: Trends and Issues in Educational Computing*—a window of opportunity for educators at all levels.

For pricing information or to order, contact: ISTE, University of Oregon, 1787 Agate St., Eugene, OR 97403 ph. 503/346-4414.

# Teach a power class.


The Power of Nation States

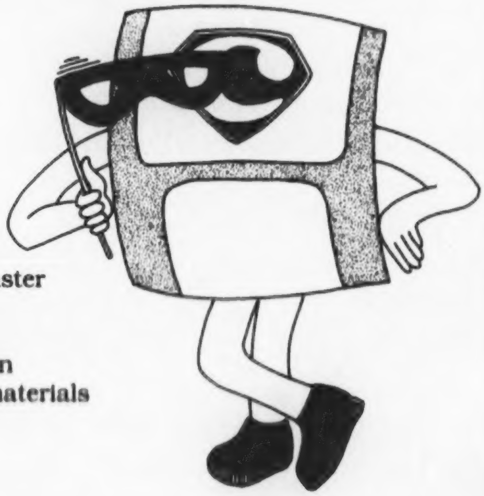
- Begin with *The Power of Nation States* from ISTE.
- Apply *AppleWorks* or Microsoft *Works* and watch the compelling data unfold.
- Guide students through prominent issues in world geography, international politics, economics, and political philosophy.
- Utilize the extensive variety of statisitics concerning various attributes of power for 167 nations.
- Encourage students to test their own theories of power.
- Modify, add, and challenge *The Power of Nation States* to suit the needs of your high school or college students.

**Experience the power, *The Power of Nation States*.**

Copyrighted by Data Disc International. Published and distributed by ISTE.
Classroom license-$59.95, Site license-$94.95 +$5.00 shipping

**ISTE, University of Oregon, 1787 Agate St., Eugene, OR 97403 ph. 503/346-4414.**

# ClassWorks exposes AppleWorks!



The best way for you to introduce AppleWorks® to your class is with *ClassWorks—AppleWorks for the Classroom.*

Students will unmask all of AppleWorks offerings through worksheets, quizzes, and overhead transparencies. Challenge your students to apply probability, correlation, and graphing in the math curriculum; analyze the 1988 Olympic results; and master the operations of a fast food restaurant.

Everything you need to teach AppleWorks is included in *ClassWorks*, even a site license so you can share the materials with everyone in your school.

***Bring out the best in AppleWorks— ClassWorks: AppleWorks for the Classroom.***

*For price information or to order, contact: ISTE, University of Oregon, 1787 Agate St., Eugene, OR 97403; ph. 503/346-4414.*

**Make your desktop publishing software earn its keep.**

By now you have discovered that there is more to desktop publishing than mastering the keystrokes and commands of the software. *Exploring Graphic Design* teaches you how to plan and produce letterhead, posters, newsletters, manuals and books.

*Exploring Graphic Design* is a concise and thorough overview of essential design principles and their application to practical problems. It complements any desktop publishing program. Perfect for secondary school or university classes, or as a helpful reference for adults.

Get your money's worth from your desktop publishing software by *Exploring Graphic Design.*
**$9.95** plus $2.85 shipping

*ISTE, 1787 Agate St., Eugene, OR 97403;*
*ph. 503/346-4414.*

ISTE

**Telecommunications: Make the connection.**

Whether you want to hook up with a teacher in Kenya, or a teacher across town, ISTE's *Telecommunications in the Classroom* will help you make the connection.

Authors Chris Clark, Barbara Kurshan, Sharon Yoder, and teachers around the world have done your homework in *Telecommunications in the Classroom*. The book details what telecommunications is, how to apply it in your classroom, what hardware and software you'll need, and what services are available. *Telecommunications in the Classroom* also includes a glossary of telecommunications terms and exemplary lesson plans from K-12 teachers.

*Telecommunications in the Classroom* is an affordable, informative resource for workshops, classes, and personal use.

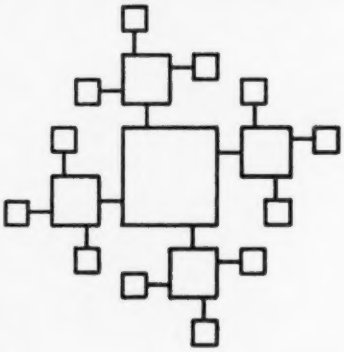
**Make your connection today with ISTE's**
***Telecommunications in the Classroom***

ISTE, University of Oregon, 1787 Agate St.,
Eugene, OR 97403 ph. 503/346-4414

*Be Involved in ISTE's*
*newest Special Interest Group,*
*HyperSIG and receive*

## *HyperNEXUS*

**Journal of Hypermedia and Multimedia Studies**



HyperSIG is ISTE's SIG for hypermedia and multimedia applications in education. HyperSIG collects and disseminates information on the use of hyper/multimedia in classrooms; sponsors conference presentations, activities, and meetings; and helps develop hyper/multimedia projects.

*HyperNEXUS*, published quarterly by HyperSIG, features articles on projects, lesson plans, and theoretical issues concerning the educational use of hypermedia and multimedia. Reviews of hardware, software and books help keep readers up to date in this rapidly changing field.

**For Membership Information Contact:**

International Society for Technology in Education
1787 Agate Street
Eugene, Oregon 97403

(503)346-4414 FAX: 503/346-5890

Compuserve: 70014,2114 Bitnet: ISTE@Oregon

## Their inquiring minds want to know.

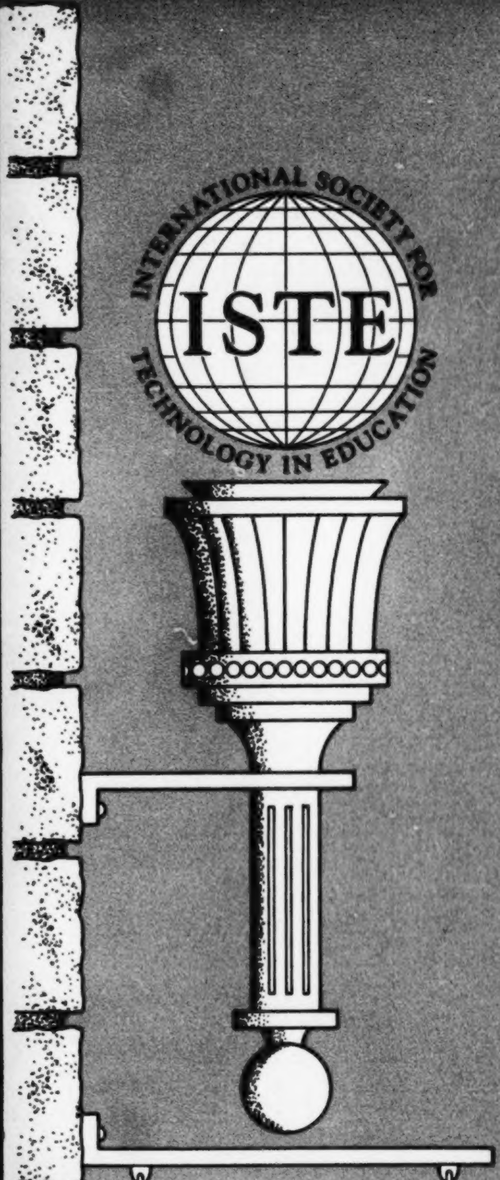
And you'll help them discover how to find the answers. By using ***Teaching Thinking Skills with Databases*** in your classroom, you'll challenge students to develop a mind of their own.

Designed for Grades 4-8, this step-by-step guide by Jim Watson gives you the opportunity to impact your students' cognitive development through the use of databases.

***Teaching Thinking Skills with Databases*** contains 14 data files and 46 worksheet and transparency masters. Teach with databases in any subject using *AppleWorks®* or *FrEdBase*.

Use ***Teaching Thinking Skills with Databases***... because they want to know.

ISTE, University of Oregon, 1787 Agate St.,
Eugene, OR 97403 ph. 503/346-4414.


INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION
ISTE

Basic one year membership includes eight issues each of the *Update* newsletter and *The Computing Teacher*, full voting privileges, and a 10% discount off ISTE books and courseware.

Professional one year membership includes eight issues each of the*Update* newsletter and *The Computing Teacher*, four issues of the *Journal of Research on Computing in Education*, full voting privileges, and a 10% discount off ISTE books and courseware.

**The *International Society for Technology in Education* touches all corners of the world. As the largest international non-profit professional organization serving computer using educators, we are dedicated to the improvement of education through the use and integration of technology.**

Drawing from the resources of committed professionals worldwide, ISTE provides information that is always up-to-date, compelling, and relevant to your educational responsibilities.

Periodicals, books and courseware, *Special Interest Groups*, *Independent Study* courses, professional committees, and the Private Sector Council all strive to help enhance the quality of information you receive.

**Rely on ISTE support:**

- *The Computing Teacher* draws on active and creative K-12 educators to provide feature articles and carefully selected columns.
- The *Update* newsletter reaches members with information on the activities of ISTE and its affiliates.
- The *Journal of Research on Computing in Education* comes out with articles on original research project descriptions and evaluations, the state of the art, and theoretical essays that define and extend the field of educational computing.
- Books and courseware enhance teaching materials for K-12 and higher education.
- Professional Committees develop and monitor policy statements on software use, ethics, preview centers, and legislative action.
- The Private Sector Council promotes cooperation between educational technology professionals, manufacturers, publishers, and other private sector organizations.

It's a big world, but with the joint efforts of educators like yourself, ISTE brings it closer. Be a part of the international sharing of educational ideas and technology. Join ISTE.

Join today, and discover how ISTE puts you in touch with the world.

ISTE, University of Oregon,
1787 Agate St., Eugene, OR 97403
ph. 503/346-4414